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48-01 Award of the Shared Procurement Contract for Dental Delivery Systems

The Defense Personnel Support Center (DPSC) has awarded the Shared Procurement Contract (SPO-200-96D-8705) for Dental Delivery Systems to Den-Tal-Ez, Inc. The contract is for one year with two option years available to the government. Items included under this contract are the E3000 Dental Chair, AS3000 Dental Unit, and the Distinction Series Dental Light. A copy of the Customer Order List (COL) is included with this newsletter. For more copies contact DPSC at DSN 444-9049/9098.

(Lt Col Leonard) **Return to index**

48-02 Being placed on the *Dental Items of Significance* Mailing List

As noted in a previous issue of ***Dental Items of Significance***, our staff recently revised the newsletter mailing list. The updated mailing list has reduced the number of undeliverable envelopes that are returned to our office and has helped get the newsletter to more federal dental facilities. Some facilities have told us that they are receiving the newsletter second hand from their command headquarters or other facilities and have asked to have their clinics placed on the list so they can directly receive our mailings. We are happy to do so. If you would like your facility placed on the mailing list, please call and provide us with your complete mailing address or fax the information to our office.

(Lt Col Charlton) **Return to index**

48-03 Solicitation for Clinical Evaluators

The Dental Investigation Service is looking for clinicians to evaluate the handling characteristics (i.e., working and setting times, viscosity, ease-of-use, etc.) of resin cements. Because of the growing emphasis on esthetic restorations such as cast ceramic, porcelain, and composite resin inlays, onlays, and veneers, many new resin cements have recently been introduced to the market. One reason that DIS has not evaluated these products is because it has been difficult to identify individuals who are using resin cements. If you would like to participate in a user evaluation of this type of product, please fill out the Field Assistance Request Form found at the end of the newsletter and return it to DIS. Please indicate on the form that you are replying to this solicitation. When a product is to be evaluated, an explanation of the evaluation process and a free supply of the tested product will be provided to you. The process is a simple one and will give you the opportunity to use a state-of-the-art luting agent and to assist DIS in determining the overall value of the product.

(Lt Col Charlton) **Return to index**

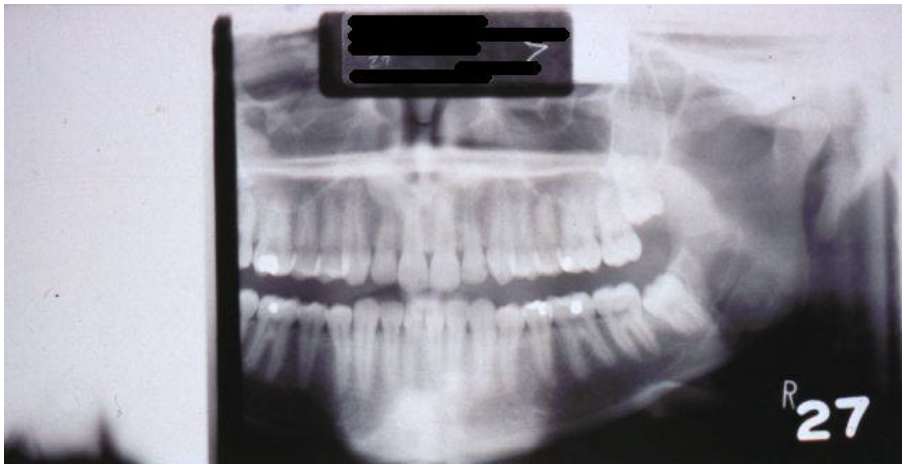
48-04 Receiving Back Issues from the Dental Investigation Service

We have recently received a large number of requests for past issues of our newsletter and for other publications from our organization. To facilitate your ordering, we have included an ordering checklist at the end of this newsletter **[Outdated item deleted]**. Please use it to identify the specific publications you want us to send to you. If you have any questions about the publications on the list, please contact TSgt Foster (DSN 240-3502).

(Lt Col Charlton) **Return to index**

48-05 Panoramic X-ray Problems

Recently, the Dental Processing Centers at both Great Lakes Naval Air Station, IL and Lackland AFB TX had problems with J Morita's Versaview Panoramic units manufactured in 1992 and 1994. Hundreds of films had to be retaken because of clear areas and heavy black lines which obscured all structures (see panoramic radiograph at right). Other films had severe distortion in the premolar region. These problems were caused by a series of events that altered the way the X-ray units functioned. A change in the hardness of the cam mechanism, combined with the heavy work load of the processing centers, grossly accelerated the amount of wear on the cam. While the first part of the film would be exposed normally, the worn cams caused the rotational motion of the film drum assembly to stop. This caused a heavy black band on the film, followed by a clear area that was not exposed. While the premolar distortion may have been caused by a change in the speed of the film rotation resulting from the worn cams, it could also have been caused by misalignment of the beam when the units were installed.



Processing center personnel contributed to the accelerated wear by spinning the film drum manually to unload and reload the film cassettes. The Versaview has a release latch that drops the film drum assembly down, allowing the operator to change the cassette without spinning the drum. Spinning the drum manually exacerbates the wear on the softer cams. Previous models of the Versaview (including models sold as the Midwest Panoral) had harder cams that resisted the added wear caused by spinning the drum assembly.

J Morita has replaced the worn parts with hardened cams and personnel at the processing centers have stopped spinning the film drum assembly. J Morita also corrected the beam alignment on two of the units. These actions together appear to have resolved the problems. Please contact DIS (DSN 240-3502) if you think you might have a problem with worn cams. Note that only mechanical units are subject to cam wear. Units with electronically-controlled stepper motors do not have cam and roller mechanisms and, therefore, they are not susceptible to this problem.

(Lt Col Plamondon)

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48-06 Identic Dustfree Alginate Complaints

Clinicians from three Air Force dental clinics have recently contacted DIS to report clinical handling and overall performance problems with the currently stocklisted alginate, Identic Dustfree Alginate (Cadco Dental Products). The reporting individuals filed SF 380s (Reporting and Processing Medical Materiel Complaints/Quality Improvement Reports) claiming that Identic exhibited the following problems: the material was grainy and lumpy after mixing; it stuck to teeth and to gypsum models; surface detail reproduction was poor; it resulted in poorly-fitting removable partial denture frameworks; and its strong

cinnamon flavoring caused a gingival burning sensation. Samples of the alginate were obtained from one of the reporting bases and the DIS Materials Testing Laboratory tested several pertinent physical properties (i.e., working time, setting time, gypsum compatibility, and detail reproduction). We were unable to confirm the clinical complaints of gingival burning or poor post-mixing consistency and did not find the setting and working times to be at variance with the times claimed by the manufacturer. DIS did find that the product failed the detail reproduction requirement of the pertinent specification for alginate impression material, however the product passed when a different batch of the tested stone (Die-Keen) was used. This testing seems to indicate that the clinical problems experienced by operators may have been batch-related. The poor detail reproduction may have been related to the specific batch of stone used or an interaction between the stone and the alginate. If you are using Identic Dustfree Alginate and are experiencing problems with its performance, DIS suggests that you contact Cadco for a replacement of the alginate. Direct your request for a replacement of the material to the following:

Cadco Dental Products, Inc.
600 E. Hueneme Road
Oxnard, CA 93033-8600
Attn: Mr. Paul Wittrock

If you experience problems with any dental material or piece of equipment, please contact DIS so that we are aware of the difficulty and can provide guidance to remedy the situation.

(Lt Col Charlton)

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48-07 The Dental Investigation Service Website

The Dental Investigation Service now has a site on the world wide web that you can visit. To access the site, use the following address:

http://www.brooks.af.mil/HSC/AL/AO/AOC/AOCD/dis-home.htm

Please be aware that the address may be case specific, so be sure to enter the address exactly as you see it above. Currently, the site offers you the most recent issues of the ***Dental Items of Significance*** newsletter as well as an easy way to electronically contact us. Please feel free to e-mail suggestions to us about what you would like to see on the website (alaocd@alaoc.brooks.af.mil).

(Lt Col Charlton)

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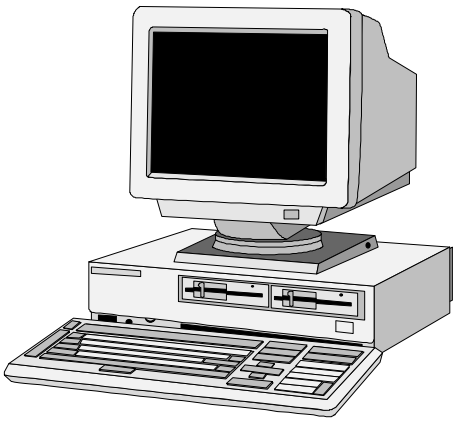
48-08 Surfing the World Wide Dental Web



In each issue of ***Dental Items of Significance,*** we provide a list of sites on the world wide web that contain dental information. This issue's list features websites of dental product manufacturers. Each of the sites listed below is followed by a brief description to help you determine if the site is worth a visit.

http://www.orascoptic.com

Homepage for Orascoptic Research, Inc. Features information on magnification and illumination products for clinical dentistry. Also provides information about ergonomic operator stools.

http://www.jeneric.com

Website for Jeneric/Pentron, Inc. Products featured at this site include direct fill and laboratory composite resins, impression materials, casting alloys, amalgams, and porcelains.

http://www.mmm.com/dental/prod_annc.html

Homepage for 3M Dental Products. Features information on 3M electronic anesthesia equipment, restorative resins and resin/glass-ionomer hybrids, luting cements, impression materials, bite registration paste, X-ray film, and pit and fissure sealants.

http://www.kulzer.com

Website for the Heraeus Kulzer Company. Provides information on direct fill and laboratory resins, X-ray film, impression materials, gypsum products, ultrasonic cleaning solutions, rubber dam clamps, and bonding products.

http://www.morita.com

J. Morita, USA website. Features information on Morita's apex locator, adhesive resin cement, bonding products, and impression materials.

http://www.pulpdent.com

Extensive homepage for the Pulpdent Corporation. Included is information on new products as well as the company's established product line. Also available are instructions and Material Safety Data Sheets for select Pulpdent products.

If you find an interesting dental-related site, please e-mail the address to kane@alaoc.brooks.af.mil or charlton@alaoc.brooks.af.mil for inclusion in future issues.

(Lt Col Charlton)

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48-09 Meeting the DIS Staff

In each issue of the ***Dental Items of Significance***, we feature a different member of the DIS staff and provide some brief biographical information about him or her. We hope that in providing a brief biography of the staff, we will become more familiar to you so that when you call with a question or to discuss a matter, you will feel that you have a friend at the other end of the line. This issue's staff member is architect Richard Blankman who, with Lt Col Jim Kane, staffs the Facility Standards and Design Section

Richard Blankman - Richard was born in Winthrop, Massachusetts, and as a young child moved to San Antonio, Texas where he grew up. He attended Texas A&M University where he received a Bachelors of Science in Architecture degree. After graduating in 1963, he served a six-month military tour with the US Coast Guard Reserve in the northern California area. After his military tour, Richard returned to San Antonio and worked with several architectural firms, including his own, from 1964 to 1979. Richard then left private enterprise and went to work with the government as a civil service employee with the Veterans Administration Medical Center in Temple, Texas where he was Chief of Engineering Construction and Design. From 1982 through 1989, Richard worked with the Air Force at the San Antonio Real Property Maintenance Agency at Ft Sam Houston as a consultation architect. Later, he worked in the Kelly AFB Civil Engineering

Squadron as a construction projects programmer and consultation architect and engineer. From 1990 through September of 1994, he worked at the Peterson AFB Civil Engineering Squadron in Colorado Springs, CO. In September, 1994 Richard joined DIS. His main responsibilities are to review construction plans and to provide design guidance when new dental clinics are being built or when existing facilities are being renovated or remodeled. Richard and his wife, Linda, have three sons.

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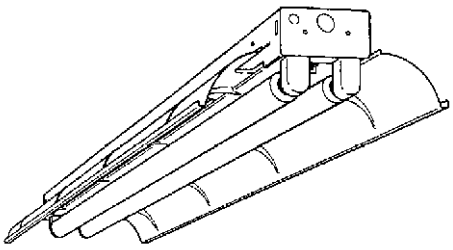
FACILITIES AND CONSTRUCTION

48-10 Less Expensive Color-Corrected Fluorescent Tubes

With the increased emphasis on esthetic dentistry, color-corrected lighting in operatories is more important than ever. However, since lighting products are usually purchased by the facility manager, it is often difficult to convince the facility manager to purchase costly color-corrected tubes. Fortunately, color-corrected tubes are now available for some fixtures at a price that is competitive with noncolor-corrected tubes. The color-corrected tube previously recommended by DIS (Durotest #3830) is no longer routinely stocked by the Defense Logistics Agency.



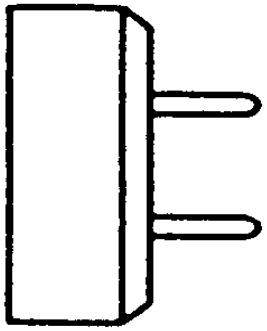
For optimum color matching, a lighting product should have a color rendering index (CRI) of 90 or higher. The color rendering index reflects how closely the intensity of the light at each wavelength matches daylight. A CRI of 100 is a perfect match to daylight and a CRI of 90 or better is considered acceptable for shade matching. The ideal color temperature is 5500°K.

Because the Energy Policy Act of 1992 (public law 102-486) established minimum requirements for energy efficiency for fluorescent tubes with an effective date of 10/31/95, new types of fluorescent tubes are being made. To meet the new energy standards, fluorescent tubes that were previously 40 watts now typically use 32 to 34 watts. Unfortunately, 34-watt tubes often produce less light than their 40-watt predecessors. Identifying the 34-watt tubes can be a problem because of the way they are labeled and the manner in which they are sold through catalogs. The older 40-watt tubes were referred to as F40T12 and the newer tubes are referred to as F40T12/ES. Although the newer tubes still have a 40 in their label number, they actually require 34 watts. Further confusing the issue is the fact that many catalogs still list the energy-saver tubes under a "40-watts" heading.

To ensure that you order the appropriate tubes for your clinic, it is important to understand a little more about a recent change that fluorescent tubes have undergone. To increase energy efficiency, manufacturers began making narrower tubes. Since they are narrower, they contain less of an expensive but more efficient argon-krypton gas mixture. This enables the manufacturer to produce a more efficient tube at approximately the same cost. The older, thicker tubes are called T12 and are 12/8ths of an inch thick (1 1/2 inch). The newer, more energy efficient, narrower tubes are called T8 and are 8/8ths of an inch thick (1 inch). In general, T12 tubes will not work in fixtures designed for the newer T8 tubes, so it is important to know what bulbs and fixtures your clinic uses.

DIS has identified a source for cost-effective, color-corrected tubes. Note that this pertains ONLY to facilities using F40T12 or F40T12/ES fluorescent tubes (check with your facility manager). Although the tube produces about 15% less light than its 40-watt predecessors, in one test clinic the staff did not

notice the light reduction.



NSN: 6240-01-344-9936
Commercial Equivalent: GE F40/C50/RS/WM
Color Rendering Index (CRI): 90
Color Temperature: 5000°K
Tube Size: T12
Tube Length: 48 inches
Base: Medium Bipin (see picture at right for configuration)
Power: 34 Watts, Rapid Start
Light output: 2000 lumens per tube
Estimated Life: 20,000 hours
Cost: $2.88 each in boxes of 30

For critical color matching areas, where longer life, or 15% higher output are needed, consider:

NSN: 6240-01-236-4423
Commercial Equivalent: Durotest #3815
Color Rendering Index (CRI): 91
Color Temperature: 5500°K
Tube Size: T12
Tube Length: 48 inches
Base: Medium Bipin
Power: 40 Watts, Rapid Start
Light Output: 2340 lumens per tube
Estimated Life: 22,000 to 26,000 hours
Cost: $7.78 each in box of 12

For facilities using F40T8 or F32T8 fluorescent tubes ONLY (check with your facility manager): The choices for T8 users are less attractive. The first option has a color rendering index of only 85 which will be noticeably yellow but still better than the average fluorescent tube. The other alternative is a color-corrected (CRI>90) bulb but it is more expensive.

NSN: 6240-01-344-9507
Commercial Equivalent: GE F32T8/SPX41
Color Rendering Index (CRI): 85
Color Temperature: 4100°K
Tube Size: T8
Tube Length: 48 inches
Base: Medium Bipin
Power: 32 Watts
Light output: 3050 lumens per tube
Estimated Life: 20,000 hours
Cost: $2.43 each in boxes of 30

For critical color matching areas, consider:

NSN: 6240-01-366-0692
Commercial Equivalent: Durotest #1318
Color Rendering Index (CRI): 91
Color Temperature: 5500°K
Tube Size: T9 (but fits in T8 applications)
Tube Length: 48 inches
Base: Medium Bipin

Power: 34 Watts, Rapid Start
Light Output: 2350 lumens per tube
Estimated Life: 26,000 hours
Cost: $7.30 each in box of 24

To order lighting products or for a catalog of other size/types of lighting products, contact:

Defense General Supply Center
800 Jefferson Davis Highway
Attn: Marketing Office
Richmond, VA 23297-5000
(800) 352-2852 (Voice)
(804) 279-5699 (Voice)
(800) 352-3291 (FAX)
(804) 279-5695 (FAX)
695-4734 (DSN Voice)
695-5695 (DSN FAX)

(Lt Col Kane)

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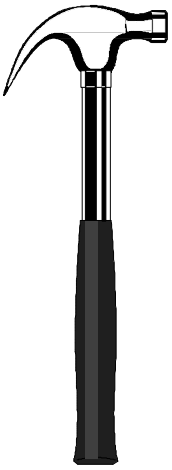
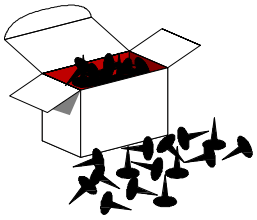
48-11 Getting Started with a Facility Project





Being faced with managing the construction of a new dental facility or with the renovation of an existing clinic can be a daunting task. Few of us were trained in dental school in architecture or in facility design. The Dental Investigation Service (DIS) is well equipped to help you with the sometimes complicated job of overseeing this type of project. The following are a few important guidelines that will help you through the process.

1. The first step is to try to determine what you need in your facility. When doing this, you should take into account your specific needs and projected manning. Some of the important questions to answer are: What would you like the facility to look like? What new functional areas do you envision needing? One example is a dental instrument processing center. What additions or alterations do you think would be of value to you? These include such things as new treatment rooms, office space, and locker areas. Are there areas in your facility that would benefit from a renovation, such as a new laboratory? Answering these questions and learning to think in terms of them will help you to conceptualize what you want and need.

2. To help decide how large each new or remodeled area should be, contact us at DIS. Richard Blankman, our staff architect, and I have various space-planning guidelines that suggest the appropriate number and size of rooms based on the size of your staff.

3. Once you have a firm vision of what you want and how much space it will require, look at your existing facility to see if the proposed areas fit within the footprint of your clinic. If you have some existing but unused dental treatment rooms or a plaque control room, those areas may be converted to a new function. If possible, this type of space conversion can be helpful because changing the footprint of the building faces certain funding limitations.

4. To calculate a rough cost estimate of your project, add the area in square feet for the project and multiply by $166 per square foot. Increase that value to $230 per square foot for dental instrument processing center projects to take into account the washers, sterilizers, and other equipment items those specific projects require. These dollar figures apply only to CONUS (continental United States) and will be greater in high-cost areas.

5. The next step is to have drawings made of the planned construction. DIS is more than willing to do this for you. If you are interested in having drawings made, contact us so we can tell you what information to send. We usually require copies of the blueprints of your current building from your civil engineering unit along with a written or verbal description of the information you have from answering items #1 to 3 above. In addition to providing support with drawings, DIS can give you complete instructions on how to proceed based on your individual project. We also offer guidance on how to best fund your project. Some funding information has been published previously (see DIS 43-07 and 44-14).

The goal of the Facilities Design Section at DIS is to help you with your construction project so that you obtain the facility or project you want. We also work to ensure that the government obtains the best value for its money. If there is one rule to keep in mind when you are faced with a project, it is probably this: contact DIS early so that we can be involved from the beginning. This will help you avoid problems and make the process easier.

(Lt Col Kane)

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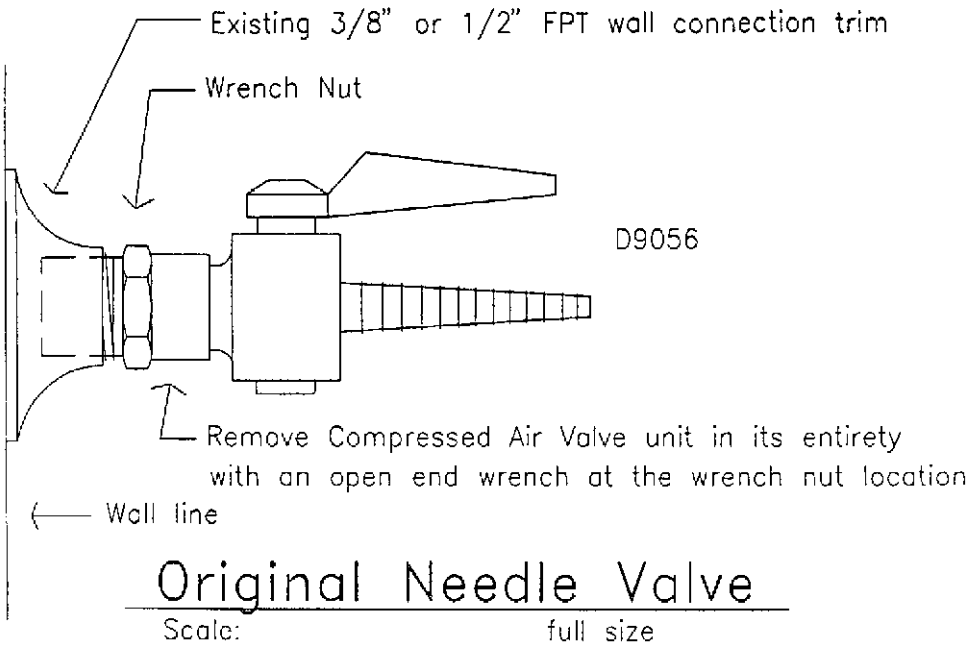
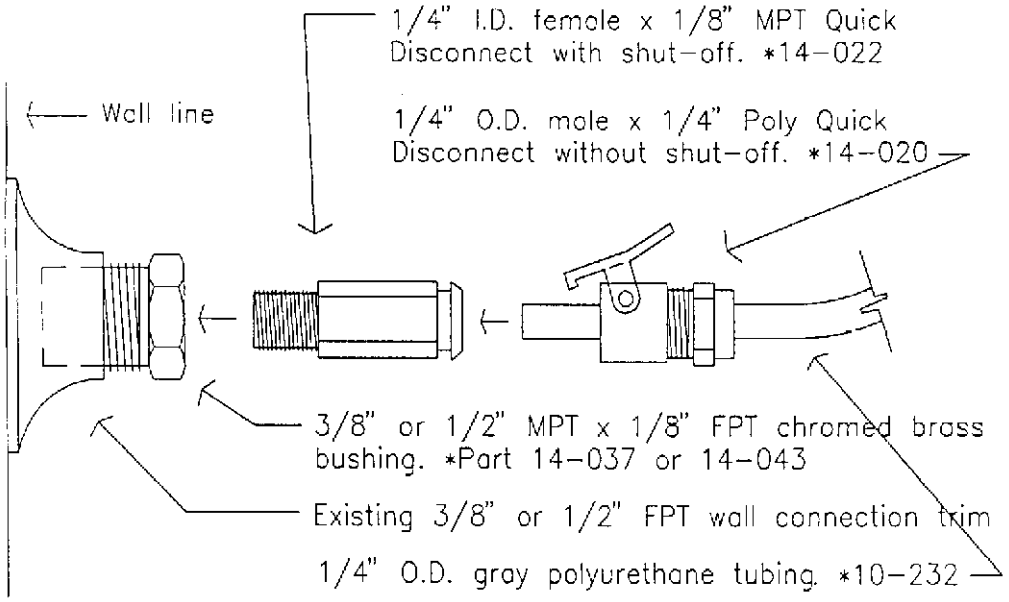
48-12 Correction of Quick Connect Air Valve Drawings

In Dental Items of Significance #44 (Jan 1995), we provided a drawing showing a recommended quick disconnect air valve unit. The drawing was inaccurate. The drawings shown on the following page are correct and show two options, one for existing sterilization area walls and one for new sterilization area walls. Laboratory connections would be similar, except that the quick disconnect devices would most probably be larger than 1/4 inch.



Original Needle Valve

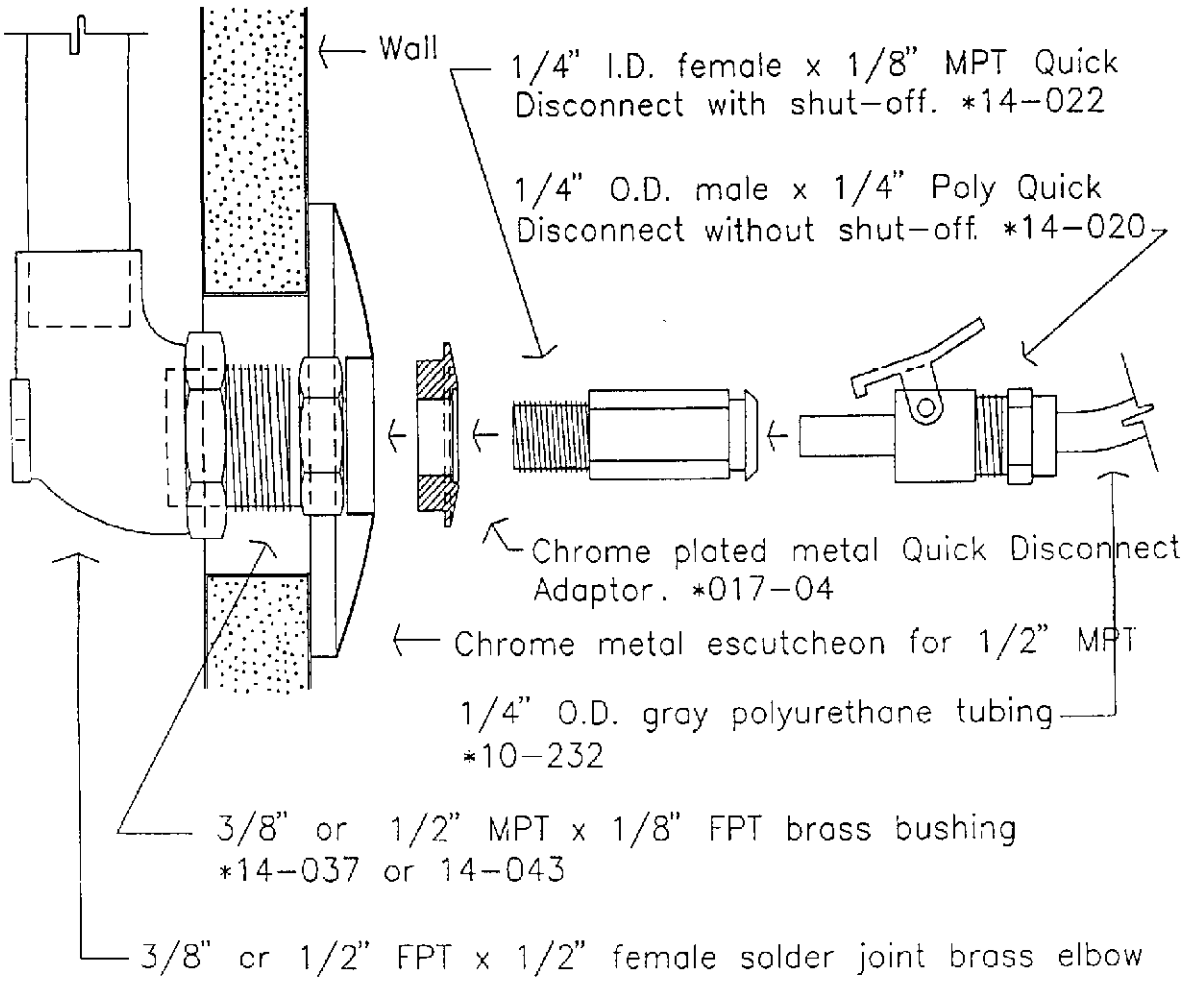
Scale: full size



Recommended 90 PSI Air Connection at Existing Air Outlets in Sterilization Areas

Scale: Full Size

*Numbers shown are part numbers as manufactured and supplied by Chapman-Huffman Company, 320 S.E. Bridgeford Blvd., Suite 1, Bend, Oregon 97702, Ph. (541) 382-7869



*Numbers shown are part numbers as manufactured and supplied by Chapman-Huffman Company, 320 S.E. Bridgeford Blvd., Suite 1, Bend, Oregon 97702, Ph. (541) 382-7869

Recommended 90 PSI Air Connection at New Air Outlets in Sterilization areas

Scale: full size

In many cases when an air purge outlet is installed in a new or existing facility, it is provided with a tapered air nozzle needle valve. Since air supply lines put onto the nozzle, even with a clamp, come off due to the air pressure, this type of valve is a potential problem. Because the quick disconnect air valve unit has a mechanical connection, it can not pop off. This makes it the best choice for facilities.

(Mr. Blankman)

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QUESTIONS & ANSWERS

"Questions & Answers" is a feature in which we present and answer the questions we most frequently receive from the field. This month we feature questions about selecting a brand of amalgam, storing flammable liquids, and "do-it-yourself" repairs of high-speed handpieces. Should you want more information about a particular topic, please contact the individual whose name follows the specific answer in which you are interested. If you have a question about a topic not discussed in this issue, feel free to call DIS at DSN 240-3502.

48-13 Factors to use when Selecting a Brand of Amalgam

Question: Recently, several new brands of amalgam have been introduced to the market and I am thinking about buying one of them. I usually base my purchase of a new amalgam on how it handles when I condense and carve it. Should I use other factors?

Answer: With new amalgam brands being introduced to the market each year, it is important to have some way of identifying the brands that will meet your needs and expectations. It is probably safe to say that most clinicians don't have an established set of criteria that they use when buying a new amalgam. Manufacturers, on the other hand, commonly use the purported clinical handling characteristics of their new amalgams as a way of marketing them. Are these characteristics useful when trying to decide if a new amalgam alloy is one you want to buy, or are there other factors that should be considered?

Before discussing whether or not handling characteristics is a factor one should use when selecting an amalgam, let's take a look at a few selection factors that, for many years, have been considered to be important. One of these factors is the amalgam's compressive strength. Frequently, clinicians compare a newly-marketed alloy's one-hour or 24-hour compressive strength with values for competing brands. Unfortunately, this factor is really not a very discriminating one. That isn't to say that strength is unimportant; in fact, the early and ultimate strength of an amalgam is quite important to its clinical performance and success. If an alloy is not sufficiently strong, the heavy loads that may be brought to bear on it will cause it to fracture and fail. The reason that strength is not a very useful selection factor is because essentially all amalgams introduced to the market exceed the minimum strength required by the ANSI/ADA specification and will be sufficiently strong to resist fracture when used appropriately.

Another factor that has been used as a selection criterion for many years has been creep (i.e., the degree to which the amalgam permanently deforms as a result of stress). In the early 1970s, a relationship was shown to exist between creep and marginal deterioration of amalgam. As a result, many clinicians evaluated and chose amalgam brands based on their creep rates. They felt that the lower the creep rate, the less chance the amalgam would exhibit chipped margins. While this is true, advances in amalgam composition have rendered creep rate comparisons essentially meaningless. This is because the creep rates for today's high-copper amalgams are so low that creep rate is no longer a useful predictor of the tendency for an amalgam to exhibit marginal deterioration. So while having a low

creep rate is still important, basically all amalgams introduced to the market today have sufficiently low creep rates.

If strength and creep are not very useful selection criteria for the vast majority of new amalgam brands being introduced to today's market, what criteria should be used? Probably the most important factor that a clinician can use when choosing a new amalgam is the results of long-term clinical studies of the product. Unfortunately, few (if any) new amalgam alloys are tested in these types of studies before they are marketed. Even when they are used in these types of studies, it is not practical to wait for three to five years for the test results before you make a choice about purchasing a new amalgam. What other factor can be used then that is clinically important? Well, we have essentially gone full circle because we return to your initial question and comment about clinical handling characteristics. Probably the most useful characteristic to consider when selecting a new alloy is the way it handles during condensation and carving. Knowing what type of amalgam the product is compositionally can be very helpful in giving you information about how you can expect it to handle. For example, if the alloy is a single-composition lathe cut amalgam (of which few exist), you can expect that it will provide definite resistance to condensation. This will make it a good choice when attempting to establish good, firm interproximal contacts. Unfortunately, its resistance to condensation makes it difficult to condense in areas with limited access. In addition, it will harden more slowly than other types of amalgam and will not be as smooth during carving and burnishing. On the other hand, single-composition-spherical alloys (e.g., Tytin, Megalloy, Valiant) have basically the opposite characteristics. They are much easier to condense into areas with limited access, they are smoother, and they harden faster. Unfortunately, it can be a challenge to produce solid interproximal contacts with this type of amalgam in certain situations. Finally, the admixed alloys (e.g., Dispersalloy, Contour, Valiant Ph.D., Original D) combine the characteristics of the other two types of amalgam. They have been described as having the advantages of the single-composition-spherical alloys but not having their disadvantage.

Although I have mentioned that strength and creep rate are not particularly useful as selection factors, you should be aware of them and ensure that the brand of amalgam you are considering has acceptable values. Dealing with manufacturers who have an established reputation can also improve the chances that you will buy a product that will meet your needs and expectations.

(Lt Col Charlton)

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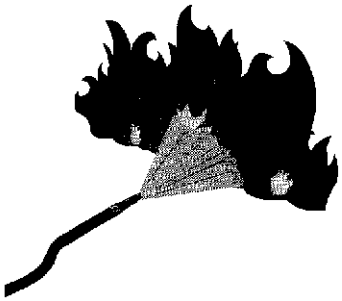
48-14 Storing Flammable Liquids in the Work Area



Question: What is the maximum amount of a flammable liquid that can be stored in a work area outside of a flammable storage cabinet?

Answer: Up to 1 pint of virtually any flammable liquid can be stored in the work area. The Occupational Safety and Health Administration (OSHA) categorizes flammable liquids in 29 CFR 1910.106 into classes Ia through IIIb with Ia liquids being the most flammable. Most dental laboratory monomers fall into either the Ia or Ib category based on their flashpoint and boiling point. Table H-12 in 29 CFR 1910.106 specifies the maximum amount of each class of flammable liquid that can be stored outside a flammable cabinet. For class Ia liquids (most flammable), the limit is 1 pint. For class Ib liquids, the limit is 1 quart. Therefore, before storing more than 1 pint in the work area, check the Material Safety Data Sheet (MSDS) or consult with your base bioenvironmental engineering personnel to be sure that the liquid is not in class Ia.

(Lt Col Kane)

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48-15 Sterile Dry Socket Dressing

Question: Are there any sterile-packaged, medicated strips for treating dry sockets?

Answer: Yes, there is a product available from Canfield, Inc. called D.S. Dressing. It is marketed as a sterile, pre-packaged, medicated dressing for treating dry sockets. It consists of 20% eugenol in white petrolatum ointment on 1/4-inch gauze strips that come in two lengths: 5 1/2 inch and 2 1/4 inch (mini-strips). The gauze has a radiopaque strip incorporated into it to aid in identifying over-retained packing on radiographs. Some oral surgeons prefer medicaments other than 20% eugenol (such as TAPPE, BIPS, Sultan's, etc.) and feel they can aseptically remove the gauze from bulk containers. Although unlikely, it is conceivable that a bulk container of dry socket packing could become contaminated. Canfield's D.S. Dressing eliminates the risk of cross contamination completely and has the additional benefit of the radiopaque strip. A box of 30 regular strips costs $14.50. A box of 60 mini-strips costs $21.50. The product may be purchased from Canfield, Inc. (800) 446-2444.

(Lt Col Plamondon)

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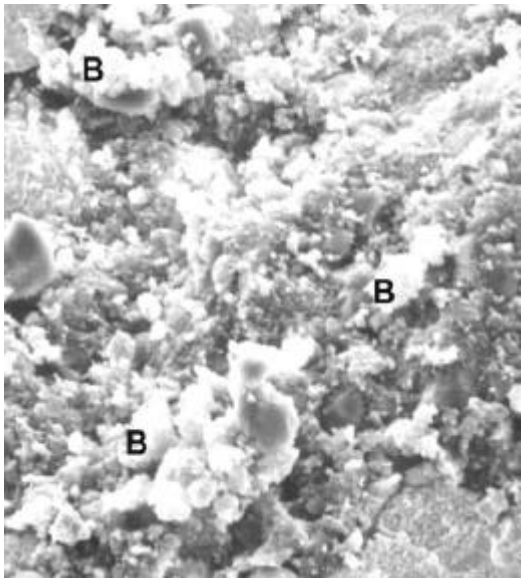
48-16 Recent Research on Amalgam Bonding

Question: Using dentin bonding agents to bond amalgam to tooth structure seems to be growing in popularity. Almost every clinician I know does it. You've talked about this before, but I'm curious to know if there is any new research on its clinical effectiveness?

Answer: You are right about the growing popularity of using dentin bonding agents instead of traditional cavity varnish. The acceptance of "bonding" amalgams occurred, in part, because early research indicated that it prevented leakage more effectively than cavity varnish. Other studies also determined that, to varying degrees, most bonding agents were capable of bonding amalgam to tooth structure. The popularity of amalgam bonding agents also benefitted from the fact that several well-known dental lecturers were strongly advocating it. They expressed the opinion that bonding amalgams was "state of the art" dentistry and to use cavity varnish was the equivalent of providing substandard service to the patient.



It has been interesting to see how the research community and clinical dentists have grown in their knowledge of the advantages and disadvantages of bonding amalgams. As I mentioned, the early research in the late 1980s and early 1990s indicated that several dentin bonding agents reduced leakage between amalgam and tooth structure and did so more effectively than cavity varnish. Most studies in the laboratory also found that dentin bonding agents bonded amalgam to tooth structure when the preparation was treated with the bonding agent immediately prior to placing the amalgam. The success of these early studies was tempered by two laboratory studies that found that the strength of amalgam may be reduced when using certain bonding agents because they can be incorporated into the amalgam during condensation. (The figure shows a cross section of

a fractured amalgam laboratory specimen showing bonding agent ("B") in the amalgam). The overall effectiveness of bonded amalgams was perceived to be positive, however, and this caused many clinicians to begin using bonding agents with amalgam. Bonding amalgam became even more popular when anecdotal reports of dramatic reductions in postoperative sensitivity were received.

Recently published research, however, has caused some clinicians to reconsider the widespread use of amalgam bonding. In the March issue of the Journal of the American Dental Association, the results of a one-year clinical study of bonded amalgam restorations were published. The authors found that marginal fracture rates (after one year) and postoperative sensitivity (after one to two weeks) were not different for bonded and varnished amalgams. The study also showed that the bonding agent, Panavia 21, was incorporated into the amalgam. As mentioned earlier, this may compromise the restoration's strength. Three papers presented at the International Association for Dental Research meeting in March also reported on the effect of amalgam bonding on postoperative sensitivity. None of the research found that amalgam bonding produced a beneficial effect in decreasing sensitivity. These findings are quite interesting given the numerous anecdotal reports of improvements in sensitivity when using bonding agents with amalgam. It is expected that the somewhat disappointing results from these clinical studies will only add to the already known shortcomings of using amalgam bonding products such as increased cost and technique sensitivity.

Research continues to be done on the effectiveness of bonding agents with amalgam for increasing resistance and retention. These studies show a range of effectiveness, with some products providing a consistent bond between amalgam and tooth structure and others having little, if any, effect. It should be noted that even those products that most strongly bond amalgam to tooth structure produce a bond that is only about one-half as strong as the bond between composite resin and dentin produced by the same dentin bonding agents. That isn't to say, however, that this bond strength isn't capable of increasing the resistance and retention of amalgam restorations. It may very well help and provide a clinical benefit. One example would be when the bonding agent is used to augment existing mechanical means of retention such as pins, amalgapins, and undercuts. It should also be noted that research is continuing on other potential benefits of bonding amalgams such as strengthening remaining tooth structure and reducing cuspal flexure.

So, clearly, the entire picture has not yet been revealed concerning the complete advantages and disadvantages of bonding amalgam with dentin bonding agents. Each clinician must make a professional judgement about the value and efficacy of amalgam bonding. As with most controversial techniques in dentistry, it is probably wise to be case selective and conservative in using amalgam bonding until additional clinical research and long-term laboratory studies have been performed. We may then have a better idea about the cost-effectiveness, efficacy, and overall clinical benefit of bonding amalgam. (Lt Col Charlton)

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48-17 Submitting 601 Packages to DIS

Question: I have heard that dental facilities are no longer required to submit 601 packages to DIS for review prior to submitting to contracting for purchase. Is this true? If I still want to have you review my proposed equipment purchase, can I send the 601 package to you?

Answer: Before I answer your question, let me say a few words of explanation about 601 packages so the rest of our readers understand what it is we are discussing. The term “601 package” refers to the AF Form 601, Equipment Action Request, which consists of a 13-point justification letter, a minimum specification letter (if required by your base), a customer order list (C.O.L.) from the AFML letter (needed on shared procurement items), and brochures to help describe the equipment you would like to purchase.

It is true that you are no longer required by regulation to send your 601 package to DIS prior to proceeding with the purchase, but we feel it would be very beneficial for you to send it to us for review. We do not want to be another layer of bureaucracy for the supply system. However, we have access to

a plethora of information and have established points of contact within the manufacturing industry that could be invaluable resources for a supply NCO who is in need of second source information or sole source justification. Also, since we evaluate a large number of products, we can easily determine which items on a piece of equipment are actual components as opposed to options that need to be ordered. Unlike contracting, we are aware of the types of products that are needed and desired in a dental clinic.

For the quickest turnaround time when you send your 601 package to us, fax us a copy of your proposal and we will fax back our recommendations. Our fax number is DSN 240-2691 or comm (210) 536-2691. We are not here to tell you what to buy; we are here to help you get what you want and need.

(TSgt Springstead)

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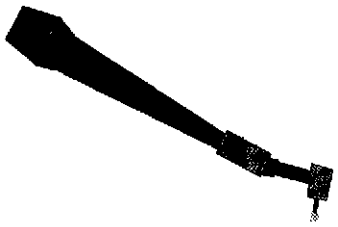
48-18 "Do-it-Yourself" Repairs of High-Speed Handpieces



Question: Recently I saw an advertisement for a device called the EZ Press that would allow clinic personnel to repair any dental high-speed handpiece on site for a lot less than what it costs to send the handpiece out for repair. This would also reduce the time a handpiece is out of service since it could be repaired on site in just minutes. Should we order one for our clinic?

Answer: At first glance it would appear that the EZ Press or other handpiece repair devices could save both time and money, but DIS does not recommend the use of these devices for the following reasons:

1) The high-speed handpieces manufactured by the Kavo, Midwest, and Star Dental companies account for 98% of all handpieces in use by the federal dental services. All three manufacturers utilize either a push-button or a power-lever to activate the chucking mechanism which allows for bur insertion and removal. In contrast to earlier models requiring a bur tool, the chucking mechanism cannot be replaced in and of itself in these newer systems. The entire assembly or turbine cartridge is intended to be replaced when any component fails. Generally, because of the way the handpiece is designed by the manufacturer, the bearings fail before the chuck does. Replacement of only the bearings, instead of the entire turbine cartridge, could result in the eventual failure of the chucking mechanism by extending the life of the entire assembly. This chuck failure could cause a serious risk management problem with the real possibility of a bur slipping out of the chuck and becoming a projectile. Intra-oral trauma and/or aspiration could result. Liability would not be borne by the manufacturer because unauthorized replacement parts were used when the handpiece was repaired.

2) Performance, especially concentricity, could be compromised. Replacement turbine assemblies provided by the manufacturer are balanced prior to shipment. Replacement of only the bearings could cause an unbalanced turbine resulting in increased noise, decreased efficiency, and decreased concentricity. The quality of care may be affected by these factors.

3) Replacement bearings are not original manufacturer parts and thus the handpiece cannot be guaranteed to perform up to the manufacturer's original specifications.

4) Most Star handpieces do not require lubrication. Replacement bearings would require lubrication. The end cap on the handpiece would still be marked "lube-free" even though the handpiece would now require lubrication. Uncertainty as to which handpieces required lubrication and which did not would ensue.

5) EZ Press does not offer any warranty on its replacement parts whereas the manufacturers generally

provide a warranty covering their repairs for six months to a year depending on the repair.

To summarize, although repair devices such as the EZ Press appear to have several appealing features, DIS does not recommend using them to repair your clinic's handpieces.

(Lt Col Leonard)

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48-19 Saliva Ejector "Suck-back" Raises Concerns

Question: I have read recently about the potential for "back-flow" of liquids from saliva ejectors on low- volume vacuum lines. Is this true? Is there anything that I can do about it?

Answer: Recently published articles have suggested the possibility that patients can come in contact with material from previous patients when they close their lips around saliva ejectors and create negative pressure which exceeds the vacuum produced by the low-volume evacuation line. How frequently this occurs in actual clinical practice is unclear. The simplest way to avoid problems in the short term is to discourage patients from using the saliva ejector "like a soda-straw" (as we often advise patients). A small hole drilled near the base of the saliva ejector with a dental bur may also be effective in reducing the potential for "suck-back" by creating a path of lesser resistance for outside air to enter the line. Routine cleaning of low-volume evacuation lines with a vacuum line cleaner may also be helpful in reducing potential risks.

(Col Mills)

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48-20 Corrosion Risks With Waterline Treatment

Question: We recently began treating our new A-dec dental units with bleach to control bacterial contamination as you have recommended. We've observed corrosion on the ISO 4-hole fiber-optic connector. What is causing this problem and what can I do to prevent it?

Answer: Newer A-dec units with fiber-optic light bulbs in the hose connector are susceptible to corrosion due to contact with bleach during waterline treatment. This problem appears to be the result of a dissimilar metals corrosion phenomenon associated with the fiber-optic bulb and connector. The bulb can be protected by pulling back the connector cover, retracting the bulb from the housing, and covering it with your hand during bleach treatment. The connector should be thoroughly rinsed and dried before re-inserting the bulb.

(Col Mills)

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48-21 Products Chosen for Evaluation by DIS

Question: Most of the products you evaluate seem to be clinically relevant. There are a few products, however, that I think should be evaluated but they never appear in your newsletter. I am interested in knowing how products are chosen for evaluation by DIS.

Answer: There are several ways that the DIS staff identifies products for evaluation. The first is through visits to DIS by manufacturers' representatives. Frequently, they schedule appointments and visit our facility to bring to our attention new products that they think we may be interested in evaluating.

A second way is through calls from the field by dentists, laboratory personnel, assistants, and hygienists. Many of you hear about a new product and/or express interest in one. When you call, we try to gauge your interest in the product in an attempt to determine whether or not you believe it is a product that DIS should evaluate. We take very seriously requests from the field for us to evaluate products because by evaluating these products we believe we are most directly supporting dental healthcare providers. The third way that DIS personnel identify products for evaluation is by attending dental meetings and visiting manufacturers' booths where companies are selling their products. Finally, products suitable for evaluation are identified by reviewing advertisements in scientific dental journals, trade journals, or special mailings from manufacturers.

If you find that DIS is not evaluating the type of products you would like to see evaluated, please feel free to contact us and let us know about them. As I mentioned earlier, the staff considers calls from the field to be an important indication of our readers' interests and we make every attempt to evaluate products brought to our attention in that way.

(Lt Col Charlton)

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WHAT'S NEW?

WHAT'S NEW? features recently marketed dental equipment and materials. New and innovative products are marketed each month and DIS is unable to evaluate all of them. This section of the newsletter brings these products to your attention. Because DIS has not had the opportunity to evaluate these products, we cannot confirm manufacturers' claims about them. If you would like additional information about the products or are interested in evaluating them, please contact DIS.

Integra is a new alginate impression material from the Kerr Corporation. The product has a light pink color and mild cinnamon odor. It is supplied in 1-pound (454-g) sealed foil pouches and is provided with an empty, standard plastic alginate can that can be used to store the contents of a pouch. A plastic water measuring cup and alginate scoop are also provided. The product is available as fast-set (purported working time of 1 minute 30 seconds) and regular-set (purported working time of 2 minutes 20 seconds). An Intro Kit (item number 26755) contains six pouches of alginate and is available from Kerr (800) 537-7123 for $26.90.

(Lt Col Charlton)

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Asepto-Sol is a disinfectant in tablet form that is used to disinfect impressions and gypsum casts. To use the product, one tablet of Asepto-Sol is dissolved in water to produce an antimicrobial solution that is then mixed with gypsum powder when the impression is poured. Because the solution contains 0.25% Cloramine T, it is said to disinfect the gypsum cast as well as the impression in contact with it. One tablet produces one liter of solution. The manufacturer claims that independent clinical studies have shown Asepto-Sol to be effective against a wide range of bacterial and viral pathogens. The product is purported to be compatible with all types of gypsum stones and plasters. A jar of 100 tablets of Asepto-Sol is available from Asepto Systems (800) 347-3096 for $40.00.

(Lt Col Charlton)

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Scotchbond Resin Cement is a dual-activated resin cement developed for use with the Scotchbond Multi-Purpose Plus Adhesive System. The manufacturer recommends it be used for the cementation of inlays, onlays, crowns, veneers, fixed partial dentures, and posts. The product is said to exhibit high strength, low wear, and low film thickness (e.g., 11.4 microns). The zirconia/silica filler content is purported to be 78.5 percent by weight. According to the manufacturer, it is particularly useful for crown and bridge applications that require additional retention (i.e., where the preparations are short and/or overtapered). The cement comes in one shade and is supplied with 60 Cleaning Pads. The pads are made of polypropylene and are used to remove unset cement. One interesting characteristic of the pads is that they supposedly preferentially absorb hydrophobic materials such as resins without absorbing water. This is said to make them very effective at removing excess unset resin. A kit of Scotchbond Resin Cement is available from 3M (800) 237-1650 for $48.00.

(Lt Col Charlton)

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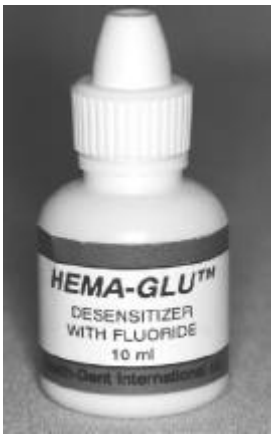
Hema-Glu is a one-bottle, fluoride-containing, desensitizing solution. The manufacturer claims that when it is used with adhesive bonding systems and crown and bridge luting agents, it eliminates post-treatment sensitivity. Hema-Glu is also recommended for the treatment of dentin or cementum sensitivity following root planing and periodontal surgery and can be used prior to placing amalgam restorations. The product is an aqueous solution of 0.5% glutaraldehyde, 35% hydroxyethyl methacrylate (HEMA), and 0.5% sodium fluoride. It has a listed shelf life of 36 months. It is purported to eliminate pain because it stops dentinal fluid shifts by polymerizing with proteins within the dentin tubules. A 10-mL bottle of Hema-Glu can be purchased from Southwest Dental Products (800) 580-2950 for $28.00.



(Lt Col Charlton)

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Fuji Bond LC is a light activated glass-ionomer bonding product recommended for bonding composite resin to enamel and dentin. It is specifically recommended when composite resin is being used to restore class I, II, III, and V preparations. The product's "ideal" modulus of elasticity is purported to cushion occlusal forces and provide stress relief between resin and tooth structure. The manufacturer also claims that the product releases beneficial levels of fluoride, has low solubility and film thickness, and provides a long-term bond. Use of the product is straightforward. It is supplied with a conditioner consisting of an aluminum chloride hexahydrate component with 20% polyacrylic acid. The conditioner is applied for 10 seconds to the exposed tooth structure and rinsed. After lightly drying the tooth, the clinician then mixes and applies a thin layer of Fuji Bond LC. It is light activated for 20 seconds after which the composite resin is placed and light activated. Fuji Bond LC is available from GC America (800) 323-7063 for $105.30.

(Lt Col Charlton)

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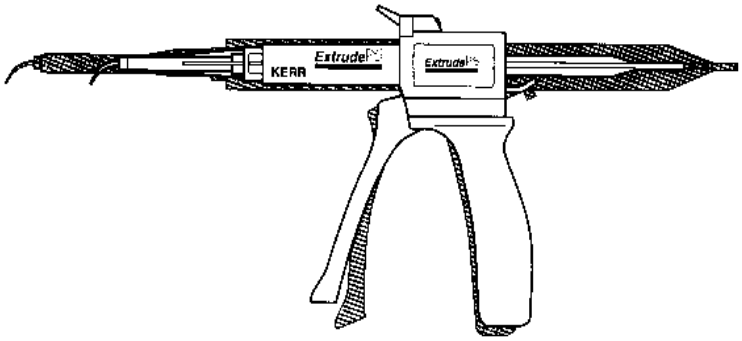
Durelon, the well-known polycarboxylate luting cement, is now available in a precapsulated form called **Durelon Maxicaps**. The capsules are only available in the large or "Maxicap" size. The manufacturer (ESPE) claims that having the product in a capsule ensures a uniform consistency of mix and makes possible the direct application of the mixed cement to the tooth and restoration. ESPE also claims that the capsules ensure that each mix has the same precise powder-to-liquid ratio which optimizes the cement's biocompatibility, film thickness, and coefficient of thermal expansion. The capsules are individually sealed in a metal blister pack. To mix the cement, the capsule is activated using a metal device and then mixed for 10 seconds in a triturator. The mixed cement is expressed from the capsule using a hand-held applier. The product is supplied with a Material Safety Data Sheet (MSDS). Durelon Maxicaps are available in a box of 20 capsules from ESPE for $37.94. The capsules, activator, and applier cost $89.35.

(Lt Col Charlton) **Return to index**

GC Tray Adhesive Remover is a citrus-scented liquid for removing adhesive from dental impression trays. GC claims that the product penetrates and removes adhesive in as little as one to two minutes. The adhesive remover is applied using a saturated cotton ball or swab with moderate pressure to dissolve the adhesive. In cases where a heavier layer of adhesive is present, the tray can be soaked in the liquid for 10 minutes to soften the adhesive. A saturated swab is then used to wipe away the softened adhesive. GC claims that the product can be used on all types of metal trays without staining or damaging them. A 16-ounce (472-mL) bottle of GC Tray Adhesive Remover is available from GC America (800) 323-7063 for $12.30.

(Lt Col Charlton) **Return to index**

Extrude PS is a new, reduced-size delivery system that can be used with light-body (wash) and medium-body Extrude impression material. The product consists of an automix gun that is approximately 20% smaller than the standard gun used with Express impression material. The figure at right shows an outline of the new dispenser superimposed over a normal-size dispenser. Cartridges used in the new dispenser are also smaller. They contain 25 mL of impression material while the traditional cartridges contain about 50 mL. The cartridges feature a split-barrel design that is purported to optimize extrusion of the material and prevent plugged and cracked cartridges. Smaller mixing tips are provided which are said to facilitate direct intraoral delivery. An Introductory Kit (item number 27513) of Extrude PS contains the dispenser gun, mixing tips, intraoral syringe tips, and cartridges of light-body and medium-body Extrude. It can be purchased from the Kerr Corporation (800) 537-7123 for $80.33.



(Lt Col Charlton) **Return to index**

Artglass is a polymer glass purported by its manufacturer to be a new type of restorative material. Part polymer and part glass, the material is light activated with a stroboscopic xenon light. Artglass is designed for use in the indirect fabrication of inlays, onlays, and veneers. It can be bonded to metal frameworks for crowns and bridges, telescopic crowns, attachment-retained prostheses, and implant-supported restorations. Heraeus Kulzer claims that Artglass will bond to all types of dental alloys using the Kevloc process. This process uses a hot-air handpiece to activate a bonding layer on the metal casting or framework. Heraeus Kulzer claims that this eliminates the need for silanation but still creates a strong bond between Artglass and the treated metal. Artglass is said to be color stable, more fracture

resistant than ceramics, and to exhibit less enamel wear than porcelain against enamel or even enamel against enamel. The entire system can be purchased from Heraeus Kulzer (800) 854-4003 for $8395.00. Components can be purchased separately as follows: $2850.00 for the pastes, $2695.00 for the light unit, and $2850.00 for the Kevloc unit.

(MSgt Ryerson) **Return to index**

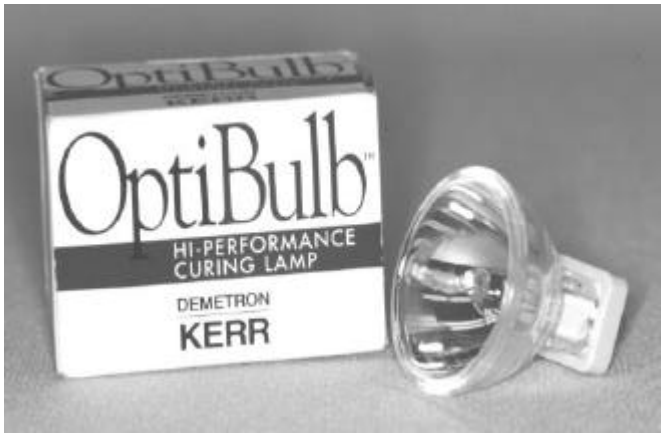
The **Shofu Acrylic Polishing Kit** is a set of straight handpiece carbide burs and rubber points for chairside adjusting, finishing, and polishing of acrylic resins, base metal alloys, and noble metal alloys. The kit contains a tapered cross-cut carbide bur and a blunt, flame-shaped, cross-cut carbide bur; three other cross-cut carbide burs of different shapes are available. There are also six Acrypoints™ (rubber points impregnated with silicon carbide) of two sizes each in three grits: Coarse (dark gray) for adjusting, Medium (brown) for finishing, and Fine (light gray) for polishing. The manufacturer claims that these points can be sterilized in chemical or steam autoclaves. The manufacturer also claims that because this product enables the clinician to do chairside finishing and polishing, it eliminates the need for disinfecting the appliance and then transporting it to the laboratory for grinding and polishing. All items in the kit can be purchased separately. The kit can be purchased from Shofu (800) 827-4638 for $33.77. A box of six large Acrypoints™ or twelve small Acrypoints™ is available for $14.92. Individual Shofu carbide laboratory burs cost $9.72.

(MSgt Ryerson) **Return to index**

The **Heliolux DLX** is Vivadent's new corded visible light curing unit which comes standard with an 8-mm-diameter curing probe. The light is generated by a 75-watt quartz-halogen bulb that is reported to provide irradiance values from 500 to 700 mW/cm^2 in the spectral range of 400 to 500 nm. The unit has a built-in light meter for periodic confirmation of the unit's irradiance output. Vivadent claims that the Heliolux DLX maintains constant irradiance values even with power fluctuations of up to ±10%. An audible signal every 20 seconds indicates the duration of polymerization, however there is no timer to set a specific curing interval. The curing unit will accept all Demetron curing probes and there are three optional curing probes available from Vivadent. The Heliolux DLX is available from Vivadent for $425.00.

(Lt Col Leonard) **Return to index**

The **OptiBulb Hi-Performance Lamp** was recently introduced by Demetron/Kerr. The bulb is reported to be more focused and to provide a more uniform light distribution than other curing light bulbs. Increased output is to be expected since the bulb is 80 watts rather than the standard 75 watts that Demetron and other manufacturers have used in the past. The manufacturer claims a longer bulb life of 90 hours compared to the 50-hour life of previous Demetron bulbs and reports a consistent output over its entire useful life. A blue coating on the reflector is purported to minimize the amount of heat that is projected forward. The OptiBulb fits all Demetron 75-watt curing lights and can be purchased from Demetron Research Corporation (800) 444-3589 for $31.00.



(Lt Col Leonard) **Return to index**

VMK 95 is a porcelain fused-to-metal system from Vident. The manufacturer claims that this porcelain gives reliable and accurate shade reproduction of the Vita Lumin shade guide straight out of the bottle. The standard system contains the following shades of porcelain: one wash opaque, sixteen opaques,

sixteen dentins, four neck porcelains, two enamels, one translucent, and one window in either 12 g- or 50 g-bottles. It also contains: one 50-mL bottle of opaque liquid, one 50-mL bottle of modeling liquid, three shade tabs, and one "G" firing tray. An additional set can be purchased separately that contains 15 shades of porcelain (three translucents, four dentin modifiers, three margins, two gingivals, two correctives, one cervical) and one shade tab. A set of 17 paste opaque porcelains and a set of opaceous dentins are also available. VMK 95 is available from Vident (800) 828-3839 for $536.00 for the 12-g standard set ($996.00 with paste opaques); the 50-g standard set costs $1077.60 ($1549.60 with paste opaques). The additional set of 15 shades of porcelain costs $201.60. The opaceous dentin set costs $193.60 and the paste opaques cost $636.80.

(MSgt Ryerson) **Return to index**

The Hygenic Corporation has introduced the **Non-Latex Dental Dam** which is fabricated from a synthetic elastomeric material. It is powder free, has no rubber scent, and has tear resistance that is said to be similar to latex dam. The manufacturer claims that the Non-Latex Dental Dam is biocompatible and has no detectable antigenic latex protein. This product may prove to be very useful in instances when patients or dental healthcare workers report latex allergies. The manufacturer states that direct contact with some commonly-used restorative materials, including BIS-GMA resin and copal varnish, is not recommended. This may be a limiting factor in the use of the Non-Latex Dam as a total substitute for latex dams. Ordering information for the Non-Latex Dental Dam can be obtained by calling the Hygenic Corporation at (800) 321-2135.

(Col Mills) **Return to index**

Midwest Plus is a new handpiece maintenance system recently introduced by Dentsply Midwest. The product consists of 8 ounces of handpiece cleaner delivered by a pump-spray bottle and a synthetic lubricant in a 2-ounce dropper bottle. Midwest Plus is said to be enviromentally friendly, contains no CFCs (chlorofluorocarbons), and is non-flammable. In contrast to previous Midwest systems, Midwest Plus is designed to be used for pre-sterilization cleaning and lubrication only. Relubrication after sterilization is not necessary. The product comes with excellent text and pictorial instructions. Midwest Plus can be ordered from Dentsply Midwest (800) 800-7202 for $21.00.

(Lt Col Leonard) **Return to index**

Topical Fluoride Foam, recently introduced by Laclede Professional Products, is marketed as an alternative to gel fluorides. The product is a foam and is dispensed from a container similar to that used to dispense hair mousse. According to the manufacturer, the foam fluoride was developed to be the first truly child-friendly topical fluoride. Laclede claims the foam does not cause the nausea and vomiting associated with gel-based fluoride topicals. Its viscosity is purported to prevent the foam from flowing out of trays prior to application. The foam's fluoride uptake by enamel is said to be equivalent to that of a popular topical fluoride gel. The product is available in a variety of flavors. A 6.5-ounce bottle of the foam is reported to provide the same number of topical fluoride treatments as a 20-ounce bottle of topical fluoride gel. The 6.5-ounce bottle is available from Laclede Professional Products (800) 922-5856 for $18.00.

(SSgt Pena) **Return to index**

Quik Floss, recently introduced by Zila Pharmaceuticals, Inc., is marketed as a convenient, simple way to floss for all types of patients, especially occasional flossers, non-flossers, and children. The product has a large gripper area for convenient, one-handed control and durable, fray-resistant, 84-D floss which is said to reduce the chance of pullout. The manufacturer claims that the unusual Y-shape of the Quik Floss provides easy access to all teeth. It also features a flexible safety pick that can be used to stimulate gingival tissues in hard-to-reach places. Thirty Quik Floss can be purchased from Zila Pharmaceuticals, Inc. (800) 922-7887 for $1.42.

(Tsgt Foster) **Return to index**

DIS IN PRINT

This feature of the newsletter will appear periodically to highlight recent publications by the DIS staff. A brief description of the work follows the title. If you are interested in reading the entire article, please call the individual whose name is highlighted for a reprint.

A multi-group longitudinal study of dental unit waterline contamination [Abstract]. Puttaiah R, **Mills SE,** Sherman LE, **Plamondon TJ,** Thrash WJ, Cottone JA. J Dent Res 1996;75:414.

The purpose of this study was to investigate waterline contamination longitudinally in five groups of dental unit waterlines and to identify effective methods to control dental treatment water contamination. An automated device which simulated dental unit waterlines was constructed. In this device, Group 1 was on sterile water; Group 2 on municipal water, with filters changed daily; Group 3 on municipal water with filters changed daily and flushed weekly with NaOCl; Group 4 on municipal water and flushed weekly with NaOCl; and Group 5 on tap water with no filters or flushing with NaOCl. Each group consisted of 4 waterlines. All lines were calibrated for similar flow time and flow rates to simulate dental practice. Baseline and weekly source water and outflow water samples from each line were evaluated for heterotrophic bacterial counts. The results indicated that outflow water from the groups using filter combinations consistently showed minimal or no contamination while all other groups showed levels of contamination that were higher than the current American Dental Association recommendation for dental treatment water.

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Effect of bleach on mature biofilm in dental unit waterlines [Abstract]. **Plamondon T, Mills S,** Sherman L, Nemeth, J Puttaiah R. J Dent Res 1996;75:414.

Microbial biofilms are ubiquitous in nature and can be found virtually anywhere there is moisture and a solid substrate for microbial adherence. While dental plaque may be the most studied biofilm, it is not the only one of interest to dentists. Biofilm formation within the small-bore plastic tubing inside the dental unit is as common as dental plaque. While dental unit water line (DUWL) contamination is not considered a major public health risk, there is reason to be concerned about the potential for disease transmission. The purpose of this investigation was to determine if DUWLs in biofilm-colonized units could be decontaminated using a manufacturer-recommended protocol. Twelve dental units using municipal water were modified by adding separate water-reservoir systems (SWS) (A-dec Inc., Newburg, OR) capable of providing sterile water to the unit and allowing for introduction of disinfectants. Heterotrophic bacterial counts were made on a pooled, 100-mL water sample from each unit using Millipore SPC Samplers (Millipore Corp., Bedford, MA). Baseline assays demonstrated the presence of planktonic bacteria in dental unit water. The 12 units were assigned to one of three groups: one control group and two experimental groups. Controls were treated with sterile, distilled water only. One experimental group was disinfected with 5.25% NaOCl diluted 1:10; the other group was disinfected with 5.25% NaOCl diluted 1:100. Treatments were conducted once per week. Water for heterotrophic bacterial counts was collected just prior to treatment. After the lines were air-purged, test solutions were flushed through the lines and allowed to remain for ten minutes. The lines were then flushed with 500 mL of sterile, distilled water; air-purged again; and left dry overnight. Results suggest that it may be possible to effect dramatic reductions in planktonic bacteria in biofilm-colonized dental units by treating the lines once a week with 1:10 bleach solution and leaving the lines dry overnight.

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Relationship between bacterial counts and free chlorine in dental waterlines [Abstract]. **Mills S, Plamondon T,** Sherman L, Nemeth J, Puttaiah R. J Dent Res 1996;75:414.

The purpose of this study was to evaluate the relationship between planktonic bacterial counts and the amount of free chlorine in dental unit waterlines undergoing treatment with sodium hypochlorite (NaOCl) solutions. Fifty-two pooled 100-mL water samples from handpiece and air/water syringe lines

on 20 dental units (A-dec Inc., Newburg, OR) located in four institutional dental clinics were assayed for planktonic bacterial contamination using Millipore SPC samplers (Millipore Corp., Bedford, MA). Four units each, located in 3 separate clinics (n=12) had undergone weekly treatment by clinic personnel with 5.25% sodium hypochlorite diluted 1:10 delivered by a separate water reservoir system (SWS) for periods ranging from 6 months to 6 years. Samples were obtained 7 days after the last decontamination procedure and immediately prior to NaOCl treatment. Samples were obtained in the same manner from 8 additional units, located at a separate clinic. Waterlines in these units had not been decontaminated prior to being equipped with SWS for this study. Five subsequent samples were obtained from each unit at 1 week intervals immediately prior to NaOCl treatment. All twenty units were treated with known concentrations of NaOCl diluted either 1:10 (5000 ppm Cl) or 1:100 (500 ppm Cl). Units were air purged and loaded with NaOCl solutions for 10 minutes. Solutions were recovered by purging and flushing waterlines with 500 mL of distilled water. Results suggest that free chlorine absorption by bacterial biofilms in dental unit water lines may be useful as an indirect measure of contamination.

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Alginate disinfection with sodium hypochlorite/sodium hydroxide: Effects on gypsum [Abstract]. Hutchings ML, Vandewalle KS, Schwartz RS, **Charlton DG.** J Dent Res 1995;75:377.

Adding sodium hydroxide to sodium hypochorite has been reported to improve the effectiveness of sodium hypochlorite as a disinfectant. This study evaluated the quality of gypsum casts recovered from alginate impressions disinfected with sodium hypochlorite that had been modified with sodium hydroxide. The specific disinfectants used were: 0.525% sodium hypochlorite; sodium hypochlorite modified with 1.5% sodium hydroxide; and sodium hypochlorite modified with 4% sodium hydroxide. Jeltrate Plus alginate impressions were made of a standard die as described in ANSI/ADA Specification No. 18 and were poured in a Type III stone (Microstone). The surface roughness of the gypsum specimens was measured using a profilometer. Results found that the sodium hypochlorite specimens were significantly smoother than the sodium hydroxide-modified specimens. The addition of 1.5% and 4% sodium hydroxide to a sodium hypochlorite disinfectant for alginate impressions caused a significant deterioration of a Type III dental stone.

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GENERAL DENTISTRY

48-22 One-Step Universal Dental Adhesive System (Project 95-28)

One-Step Universal Dental Adhesive System is a "one-bottle" dentin bonding agent recommended by the manufacturer for fifteen different types of clinical bonding procedures. The product is supplied with two syringes of "Uni-Etch," a 32% phosphoric acid semi-gel etchant that is used for etching dentin and enamel simultaneously. Following rinsing, the etched tooth surface is very lightly dried in order to prevent desiccation. One-Step Adhesive is then applied in two consecutive coats and thoroughly dried to volatilize the solvent and water. The manufacturer recommends that the treated tooth surface be carefully inspected to ensure that it appears glossy. If glossy, the bonding agent is light activated for 10 seconds. (For class V situations, the manufacturer recommends that the Adhesive be reapplied, dried, and light activated). Any adhesive remaining on the brush tip is then applied and lightly dried with air. Following this step, composite resin is incrementally placed and light activated to restore the lesion. If One-Step is being used for other bonding purposes (e.g., cementation of metal or porcelain restorations,

amalgam bonding, porcelain repair), placement procedures for the bonding agent may vary slightly. The product is supplied with a plastic brush handle, brush tips, dispensing well, and booklet of instruction cards.

Manufacturer:
Bisco Dental Products
1500 West Thorndale Avenue
Itasca, IL 60143
(800) 247-3368
(708) 773-6633
(708) 773-6949 FAX

Suggested Retail Price:

$80.00 One-Step Standard Package (product number U-10010)
- -2 syringes Uni-Etch 32% phosphoric acid gel
- -1 bottle One-Step Adhesive (4 mL)
- -1 brush handle
- -50 brush tips
- -30 syringe tips
- -plastic dispensing well

$56.00 Refill bottle of One-Step Adhesive (4 mL) (item number U-1101P)

Government Price:

$68.00 One-Step Standard Package (product number and contents as listed above)

$47.60 Refill bottle of One-Step Adhesive (4 mL) (item number as listed above)

ADVANTAGES:

+ For most bonding procedures, One-Step takes less time to apply than other products evaluated by DIS.
+ Etchant is used to simultaneously condition enamel and dentin; this simplifies the etching process.
+ Has a wide range of clinical uses.
+ Is provided with laminated instruction cards that use graphics to depict product application.
+ Packaged in a small box that takes up little storage space.
+ Expiration date is stamped on Adhesive.
+ No mixing of components is required.
+ Recommended storage conditions are listed on outside of box.
+ Etchant contains benzalkonium chloride which may have an antimicrobial effect on tooth structure.
+ Is provided with a Material Safety Data Sheet (MSDS).

DISADVANTAGES:

- Is not an all-inclusive bonding product; does not contain hydrofluoric acid, silanating solution, or metal opaquer, all of which are called for in product instructions.
- Bond strength measured by DIS was considerably less than the value claimed by the manufacturer.
- Product has an acetone odor that some clinicians and patients may find objectionable.

SUMMARY AND CONCLUSIONS:
One-Step is a one-component bonding product that clinicians found easy to use and relatively quick to apply. Although it is advertised as a "one-step" bonding agent, its application requires enamel and dentin etching with a 32% phosphoric acid etchant. The One-Step Adhesive, however, does simplify the application process because it is both primer and unfilled resin in one bottle. The product has a wide range of clinical uses and comes with a booklet of summarized instructions that is complete and user friendly. One-Step's bond strength measured by DIS was comparable to values for other dentin bonding products, but it was less than the value claimed by Bisco. Although the product requires multiple applications in certain clinical situations, it is very quick to apply for most bonding procedures. One of the main shortcomings of One-Step is that it is not an all-inclusive product. Although Bisco recommends it for a wide range of bonding procedures, it does not contain components necessary to accomplish the bonding. For example, amalgam bonding with One-Step is described in product instructions, but the procedure can not be accomplished without purchasing Resinomer, a dual-cured resin composite from Bisco. One-Step is comparable in cost to other currently-popular bonding products. **One-Step** is rated **Acceptable** for use by the federal dental services.

(Lt Col Charlton)

Full report

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48-23 Integrity Temporary Crown and Bridge Material (Project 95-38)

Integrity is a chemically-polymerized composite resin used to fabricate provisional (temporary) crowns and bridges. The product is supplied in automix cartridges and is available in three shades keyed to the Vita shade guide (A1, A2, A3.5). Two sizes of mixing tips are available: a small size for dispensing Integrity when making a single-unit temporary and a larger tip when dispensing material for multiple temporaries or a fixed partial denture.

To use Integrity, a shade is selected and the appropriate cartridge is inserted into the dispenser gun. A small amount of the material is dispensed to "bleed" the cartridge as a means of ensuring that the ends of the cartridge are not blocked. A mixing tip is then attached and Integrity is expressed into a vacuum-formed plastic stent, alginate impression, or silicone impression. Caulk recommends inserting the stent and mixed Integrity into the mouth within 45 seconds after mixing. The stent can be removed 60 seconds after seating. The provisional restoration should then be allowed to continue polymerizing for 5 minutes before being finished and polished.

Manufacturer:
L.D. Caulk
L.D. Caulk Division
Dentsply International, Inc.
P.O. Box 359

Milford, DE 19963-0359
(800) 532-2855
(302) 422-4511
(800) 788-4110 FAX

Suggested Retail Price:

$180.00 Integrity Complete Package (item numbers vary according to shade ordered: 666101 for A1, 666102 for A2, 666103 for A3.5). Contents:
- -one 55-g cartridge of material
- -five large mixing tips
- -five small mixing tips
- -one Dispenser

$115.00 Refill Package (item numbers vary according to shade ordered: 666111 for A1, 666112 for A2, 666113 for A3.5). Contents:
- -one 55-g cartridge of material
- -five large mixing tips
- -five small mixing tips

Government Price:

$117.00 Integrity Complete Package (item numbers and contents as listed above)

$74.75 Refill Package (item numbers and contents as listed above)

ADVANTAGES:

+ Produces accurately-fitting, esthetic provisional restorations.
+ Easy to trim and polish.
+ Exhibits little, if any odor.
+ Setting time is very appropriate; clinicians can remove stent approximately one minute after placement.
+ Product is supplied in cartridges used in automix gun system; this makes mixing quick and easy and ensures that a consistent mixing ratio is used.
+ Two sizes of mixing tips are available which minimizes waste and facilitates product placement.
+ A plastic device is provided to remove mixing tips from cartridge.
+ Shades are keyed to the Vita shade guide.
+ Shades are clearly listed on the side of the cartridges.
+ Sufficient number of shades for most clinical cases.
+ Provided with concise, user-friendly, illustrated instruction sheet.

DISADVANTAGES:

- Some clinicians may find that the product's working time is short and that they have to work expeditiously to seat the stent before the material begins to set.
- Material undergoes a "snap-set"; if using a direct technique, clinicians must pay close attention to the clock during polymerization to keep it from locking into undercuts or fracturing during removal.
- Mixed material is relatively thin; some users may find it difficult to work with because of the low viscosity.
- Is difficult to repair using a new mix of Integrity.
- Product is more brittle than standard acrylic provisional materials which may lead to a greater number of fractured provisional restorations.
- Has a noticeable air-inhibited layer that makes handling the provisional difficult until the layer is removed.
- Product is only minimally radiopaque; detection on radiograph is difficult.
- Cartridges require a special dispenser gun.

SUMMARY AND CONCLUSIONS:
Integrity was well accepted by the clinical evaluators who found that it produced esthetic, easily polished, extremely well-fitting provisional restorations. Although only three shades are available, they were sufficient for a majority of the evaluators. The automix dispenser system made it easy to mix the product and produced homogeneous mixes. Users found the mixing system efficient and helpful. Some problems were noted by the users, but most learned to alter their technique to compensate for them. Chief among the shortcomings were a relatively short working time and a tendency for the material to abruptly convert from a liquid to solid (or semi-solid). This "snap set" forced clinicians to carefully watch the amount of time the material had been in the mouth. If they didn't, the restoration often locked into an undercut or fractured during removal. Integrity also is only minimally radiopaque, has a thin viscosity, and has a noticeable air-inhibited layer that must be removed with alcohol or with a finishing disk or bur. The product is not easily repaired with a new mix of Integrity but can be repaired using other composite resins. Despite these characteristics, clinical evaluators rated the product highly and were impressed with its overall performance. **Integrity Temporary Crown and Bridge Material** is rated **Acceptable** for use by the federal dental services.

Full report

(Lt Col Charlton)

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48-24 Provilink Dual-Curing Temporary Crown and Bridge Cement

(Project 95-37)

Provilink, marketed by the Ivoclar Corporation, is a dual-cured (i.e., chemical-cured and light-cured) cement for the luting of provisional (temporary) restorations. It contains dimethacrylates, silanized silicon dioxide, ytterbium trifluoride, stabilizers, catalysts, and pigments. It is supplied in syringes as a base paste and a catalyst paste that are mixed in a 1:1 ratio immediately before use. Provilink is recommended for the temporary cementation of provisional crowns, bridges, inlays, onlays, and veneers. The product's instructions recommend that the cement be light activated at exposed marginal areas for 10 to 20 seconds. Ivoclar claims that light activation eliminates the waiting period normally required before the cement sets and enables the clinician to easily remove excess cement. A chemically-initiated polymerization also occurs that is purported to ensure completeness of polymerization. The cement can also be used with light curing alone by using only the base paste. The cement is eugenol-free and comes in one shade (Vita A3).

Manufacturer:
Ivoclar North America, Inc.
175 Pineview Drive
Amherst, NY 14228
(800) 533-6825
(716) 691-0010
(716) 691-2284 FAX

Suggested Retail Price:
$49.00 Provilink Standard Package (product code 6543101), contains:
-three 3-g syringes of base paste
-three 3-g syringes of catalyst paste

Government Price:
$16.00 Product code and contents as listed above

ADVANTAGES:
+ Set cement is extremely easy to clean up.
+ Because the cement is light activated, cementation takes less time.
+ Because most Provilink remains bonded to the inside of the provisional restoration when the restoration is removed, cleanup of the prepared tooth is minimal.
+ Has a generous working time; clinicians should have ample time to mix the cement and seat the restoration before the cement becomes too thick.
+ Clinician has option of using the cement as dual activated or only light activated.
+ Because the cement is eugenol-free, it should not inhibit the polymerization of resin cements.
+ Has an acceptable film thickness.
+ Expiration date is stamped on the side of each syringe of the product.
+ Suggested storage conditions are listed on box.
+ Product is sufficiently radiopaque to ensure detection on radiographs.
+ Manufacturer's instructions are easy-to-read, contain sufficient detail, and adequately describe product use.
+ Packaged with a Material Safety Data Sheet (MSDS).

DISADVANTAGES:
- Product can cause a dark discoloration at margins of provisional restoration.
- Prior to luting provisional restorations onto a composite core, the clinician should apply a separating agent (e.g., Vaseline) to the core.
- Cement should always be light activated when used.

SUMMARY AND CONCLUSIONS:
Provilink performed well in the laboratory. It has an acceptable film thickness and is sufficiently radiopaque to be detected radiographically. Its working time is sufficiently long to enable clinicians to mix and place the cement without rushing. Because it is light activated, the entire cementation process takes less time. Probably the major advantage of Provilink is that excess cement is extremely easy to clean up after light activation. The primary disadvantage of the product is that it can cause a temporary, dark discoloration at the margins of the provisional restoration. It is important to note that the cement should always be light activated when used. If it is not light activated, its rather long setting time (nearly 6½ minutes) can allow excess cement to exude from the margins and cause gingival irritation. **Provilink** is rated **Acceptable** for use by the federal dental services.

(Lt Col Charlton)

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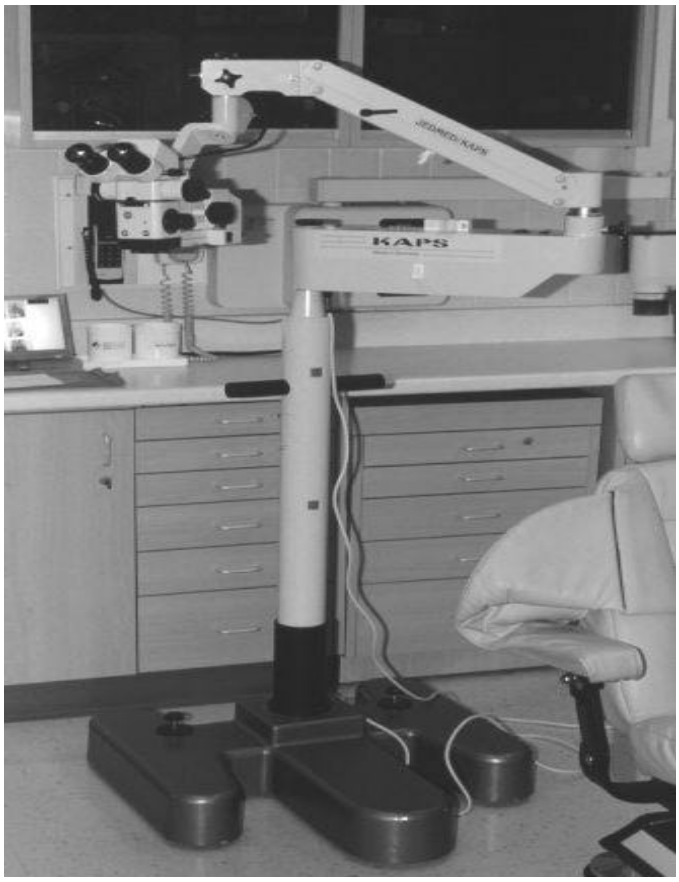
Full report

48-25 Jedmed/Kaps Endodontic Microscope (Project 94-08)

The Jedmed/Kaps Endodontic Microscope by Jedmed Instrument Company is a microscope designed to improve field visualization during surgical and non-surgical procedures. Components of the system include binocular eyepieces for the operator and the assistant. Beam splitters allow the simultaneous use of both binoculars and a video camera. Although not evaluated during this project, available options include an LCD video monitor for the assistant and foot-controlled power-zoom and power-focus. While various light sources can be ordered to provide field illumination, a xenon-halogen source mounted in the microscope head is recommended for dental procedures. The video camera can feed the signal to video monitors and video tape recorders. A 35-mm camera can also be attached to the system for recording still photographs. Jedmed will customize the modular system to meet the user's needs. A range of magnifications is available depending on how the microscope is configured. The system can be wall-mounted, ceiling-mounted, or mounted on a mobile stand. The unit evaluated was on a mobile stand and had five-step magnification: 4.0x, 6.3x, 10.0x, 12.8x, and 20.0x.



Manufacturer/Source:
Jedmed Instrument Company
5416 Jedmed Ct
St Louis, MO 63129-2217
(314) 845-3770
(314) 845-3771 FAX

SUGGESTED PRICE:	**Retail**	**Government**
Jedmed Microscope System:	$29,180.00	Approximately 5% discount depending on configuration

As tested includes:

71-2505	Floorstand Endodontic Microscope (includes eyepieces, 5-step magnification microscope head, 100-watt xenon-halogen light source, objective lens)
71-0460	Articulating assistant's binocular scope with adaptor
71-0071	Inclinable binocular for surgeon
71-0231	Beam splitter for video
71-0341	Cine adaptor
70-5900	1/3-inch chip digital camera

SUGGESTED PRICE: **Retail** **Government**

71-0370 Optical coupler for Nikon 35-mm camera
71-0377 Nikon 35-mm camera

Options not provided for evaluation:

71-0451	LCD video monitor for assistant:	$1,825.00
71-2510	Power-zoom, power-focus upgrade:	$11,910.00

ADVANTAGES:

+ Well-made microscope capable of providing outstanding field visualization and illumination.
+ Modular design allows user to customize package to fit needs.
+ Excellent video capability for documentation and teaching.
+ Installation and training included with purchase price.
+ May provide added level of provider confidence in treating difficult endodontic cases.
+ Available options include foot-controlled power-zoom and power-focus.
+ LCD monitor available for assistant.

DISADVANTAGES:

- Very expensive compared to loupes and headlamps.
- Difficult to keep surgical field in focus when patient moves.
- No documentation to demonstrate increased success rates with microscope versus loupes.
- Very steep learning curve, especially for periodontal procedures.
- Large size of system makes it less convenient to use and move around than loupes and headlamps.
- Evaluators judged customer support to be poor.

SUMMARY AND CONCLUSIONS:

The Jedmed Endodontic Microscope is a well-made instrument that provides outstanding field visualization and illumination. The Jedmed Instrument Company installs the microscope and provides training. Video capabilities are excellent. Still photography through the microscope is available but was not evaluated for this project. Although the use of microscopes in dentistry is not considered the standard of care at this time, improved field visualization may facilitate successful treatment of certain difficult endodontic cases. The modular design of the Jedmed Microscope allows the user to customize the system. While the teaching program at Wilford Hall Medical Center found the full video capability very useful, other clinics may only need to consider a basic system with a single binocular for the surgeon. This would greatly reduce the cost (government price for a basic three-step microscope without video and other options: $8500 compared to retail price as tested: $29,180). Some users may find that less costly loupes and headlamps are more convenient to use and provide adequate illumination and magnification. Potential buyers of surgical microscopes need to carefully consider the cost/benefit ratio. The **Jedmed/Kaps Endodontic Microscope** is rated **Acceptable** for use by the federal dental services.

(Lt Col Plamondon)

Full report **Return to index**

48-26 Proma Perception XL Dental Chair (Project 94-50)

The Proma Perception XL chair is designed to support the dental patient during normal dental procedures in either seated or supine positions. The chair rises and lowers using a cantilever system secured to its base. The vinyl upholstery is contoured and seamless which is reported to facilitate cleaning. The chair foot controls are part of the chair base which permits optimal asepsis. The foot controls return the chair to its last operating position as well as three additional memory positions. The articulating headrest is supplied with a magnetic pillow. The service center is designed to be an integral part of the chair base. This project consisted of a laboratory evaluation of the chair's safety features, quality of materials and workmanship, and basic operation and a clinical evaluation of its ease of use.

The Proma Perception XL chair is UL listed as well as CSA and ETL certified. ADA acceptance is pending.

Manufacturer/Source:
Proma
751 Kingshill Place
Carson, CA 90746
(800) 447-4624
(310) 327-0035
(310) 327-4601 FAX

Suggested Retail Price:
$6,530.00 Includes dual foot controls incorporated into the chair base with exit and four additional programmable positions, articulating headrest with magnetic pillow, two movable armrests, and standard swivel base. Other options available at additional cost.

Government Price:
$3,265.00 Same as above.

ADVANTAGES:
+ Dual foot controls.
+ Tools are not required for chair programming.
+ There are four programmable positions (and exit).
+ Additional safety mechanism in chair back.
+ Armrest allows easy entry/exit for patients.
+ Lack of hand controls and smooth upholstery enhance infection control.
+ UL listed; CSA and ETL certified.

DISADVANTAGES:
- Armrests were not easy to use.
- Operators had trouble remembering which foot control buttons were used for preprogrammed positions.
- Chair toe-board is one inch shorter than the length required by the military specification.

SUMMARY AND CONCLUSIONS:
The Perception XL Chair comfortably supports the patient during normal dental procedures in either the seated or supine positions. The foot controls and utility service center are integrated in the base of the chair which gives a smooth transition from chair to floor utility connections. Both the Seat Back Safety Protection System and kick panel stop downward movement of the chair if an obstruction is encountered. A major advantage of foot controls is the enhancement of infection control by eliminating the need for hand controls. Seven out of nine of the evaluators found the foot controls and the armrests were not easy to operate. The **Perception XL Dental Chair by Proma** met the majority of specifications or was equipped with acceptable alternatives and is rated **Acceptable** for use by the federal dental services.

Full report

(TSgt Springstead, Lt Col Leonard, Mr. Gambal)

48-27 Proma Response II Dental Unit (Project 94-51)

The Proma Response Series units are available in three different delivery packages for the European-style delivery system. All of the systems have an arctic white finish with light gray tubing. The service center is an integral part of the chair base. The Response I includes a transthoracic arm, three automatic handpiece controls, and an air/water syringe with Quick-Change sterilizable tip. The Response II has all the features of the Response I plus the Compass North assistant's instrumentation

assembly. The assembly is attached to the back of the chair and includes an autoclavable ProValve Plus HVE and saliva ejector. The Response III has all of the above features, plus a gravity drain cuspidor with an automatic, metered, cup filler and timed bowl rinse. The delivery system that was evaluated for this report was the Response II. A factory-installed separate water system is available as an option. This project consisted of a laboratory evaluation of the unit's safety features, quality of materials and workmanship, and basic operation. A clinical-user evaluation of its ease of use was also performed. The Proma Response II unit is UL listed as well as CSA and ETL certified. ADA acceptance is pending.

Manufacturer/Source:

Proma
751 Kingshill Place
Carson, CA 90746
(800) 447-4624
(310) 327-0035
(310) 327-4601 FAX

Suggested Retail Price:

$5,305.00 Response II Unit with three automatic handpiece controls, air/water syringe with Quick-Change sterilizable tip, Compass North assistant's instrumentation assembly including the autoclavable ProValve Plus HVE and saliva ejector valve. Other options available at additional cost.

Government Price:

$2,652.00 Same as above.

ADVANTAGES:

+ Easy to disinfect or barrier protect.
+ Easy left- to right-handed conversion.
+ Decreased chance of percutaneous injury.
+ Pinch-Valve system eliminates the need for multiple parts.
+ Pinch-Valve system eliminates water retraction.
+ Solids trap easy to remove and clean.
+ Tilt-up safety mechanism on cuspidor.
+ Tilt-up safety mechanism on assistant's instrumentation.
+ Accessory parts are easily removed and autoclaved.
+ Air/water syringe is equipped with a Quick-Change sterilizable tip.
+ Compass North instrumentation was highly regarded by evaluators.
+ A factory-installed separate water system is available.
+ UL listed; CSA and ETL certified.

DISADVANTAGES:

- Controls are not labeled on the bottom of the control head.
- Unit arm attachment hits patients' feet when adjusting control head.
- The "quiet-pad" covers a portion of the on/off label for both flush function and coolant water; this confused operators when they needed to use the controls.
- Most evaluators felt the European-style delivery precluded easy positioning and limited access to oral cavity.
- Handpiece hoses constantly overlapped each other on top of the control head.

SUMMARY AND CONCLUSIONS:

The Proma Response II Unit has several features that distinguish it from other dental units. The most prominent of these is the patented Pinch-Valve system. By design, it eliminates cross-contamination

caused by water drawback and eliminates brass block valves, pistons, O-rings, diaphragms, and check valves which require maintenance. Several accessory parts such as the control head handles and assistant's instrumentation housing are easily removed for autoclaving. Some evaluators had little experience using the European-style delivery system and, therefore, found this particular model of unit somewhat difficult to use. The unit either met all of the requirements on the standard unit evaluation checklist or had acceptable alternatives to the standard. **The Proma Response II Dental Unit** is rated **Acceptable** for use by the federal dental services.

Full report (TSgt Springstead, Lt Col Leonard, Mr. Gambal) **Return to index**

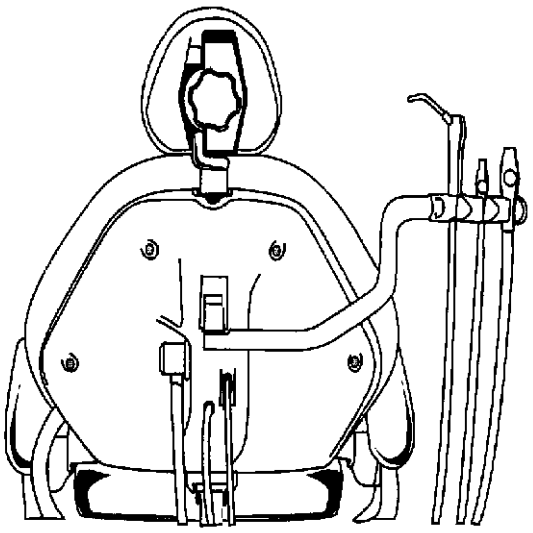
48-28 A-dec Decade 1021 Vac Back Dental Chair (Project 94-78)

The A-dec Decade 1021 Vac Back dental chair comes standard with a hydraulic lift system, seamless upholstery, padded armrests, and a double articulating headrest. It also features an eight-function foot control with four programmable chair positions. The assistant's instrumentation is located on the back of the chair (see figure at right) and includes HVE, saliva ejector, and autoclavable three-way syringe. An optional Touch Pad can be ordered that duplicates the functions of the chair foot control. The chair measures 58.5" H x 27" W x 72" L and weighs 280 pounds. The chair can be configured for either 110 or 220 volts. The Decade 1021 chair is UL listed, CSA and ETL certified, and ADA accepted.

Manufacturer:
A-dec, Inc.
2601 Crestview Drive
Newberg, OR 97132
(800) 547-1883
(503) 538-9471
(503) 537-2702 (FAX)

Suggested Retail Price:
$6415.00

Government Price:
$3496.00



ADVANTAGES:
+ Meets or exceeds all military specifications for dental patient chairs.
+ Smooth, seamless upholstery and overall design facilitate asepsis.
+ Hydraulic cantilever system provides smooth, quiet operation.
+ Has eight-function foot control with four programmable positions and optional Touch Pad.
+ Vac Back design facilitates right- to left-hand conversion without tools.
+ Vac Back design reduces perception of cluttered operatory.
+ UL listed, ADA accepted, and certified by CSA and ETL.
+ Self-lubricating pivots and bushings.
+ Well-illustrated operation, maintenance, and installation manuals.

DISADVANTAGES:
- Some evaluators felt the amalgam trap was difficult to reach and clean.
- For some operators, the chairback thickness may make access to the patient difficult.

SUMMARY AND CONCLUSIONS:
The A-dec Decade 1021 Vac Back Chair met or exceeded all specifications on the DIS patient chair evaluation checklist as well as ADA specification No. 46 for dental chairs. The chair has been designed to provide for patient comfort, operator access, and asepsis. The Vac Back feature offers assistant instrumentation that minimizes the perception of a cluttered operatory. The assistant instrumentation is easily converted from right- to left-hand delivery without tools. A pivoting holder arm and instrument holder maintains instrumentation in a horizontal position regardless of the chairback position. Some evaluators felt the Vac Back design and resultant increased chairback thickness limited operator access to the patient. The majority of evaluators however did not report this difficulty. Several evaluators found the design and position of the amalgam trap made it difficult to remove and clean the trap. The **Decade 1021 Vac Back Chair** is rated **Acceptable** for use by the federal dental services.

Full report

(Lt Col Leonard, TSgt Springstead, Mr. Gambal)

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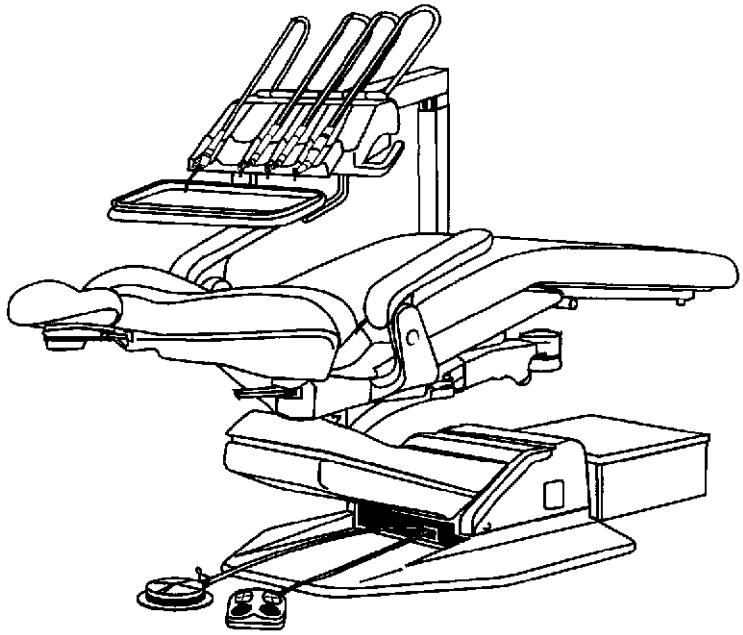
48-29 A-dec Radius 2132 Continental Dental Unit (Project 94-72)

The A-dec Radius 2132 Continental dental unit comes standard with the Cascade handpiece control system for three handpieces and an autoclavable three-way syringe. It is attached to either the Decade 1021 chair (shown at right) or the Cascade 1040 chair via the Radius hub that is designed to allow rotation of the unit arm for more effective positioning control and for easy tool-less right- to left-hand conversion. Also standard is a toggle-activated control head air brake, wet/dry disc foot control, arm-mounted instrument tray holder, and a large stainless steel floor box containing air and water filters, pressure regulators, and shut-off valves. The unit evaluated by DIS was configured with the following options: chair touch pad, control head air brake incorporated into the positioning handle, intraoral light source and bulb-contained fiber-optic handpiece tubing, Cascade separate water system, extra duplex outlet, and a 300-watt power supply. The Continental delivery system is purported to reduce the chance of percutaneous injury and to be more ergonomically friendly to the operator. The unit can be configured for either 110 or 220 volts. The Radius 2132 Continental unit is UL listed, CSA and ETL certified, and ADA accepted.



Manufacturer:
A-dec, Inc.
2601 Crestview Drive
Newberg, OR 97132
(800) 547-1883
(503) 538-9471
(503) 537-2702 (FAX)

Suggested Prices:

	Retail	Government
A-dec Radius 2132 Continental Unit	$5210.00	$2839.00
Handle and Push-Button Air Brake	$130.00	$71.00
Chair Touch Pad	$260.00	$142.00
Intraoral Light Source (for two handpieces)	$335.00	$183.00

Fiber-optic Handpiece Tubing	$200.00	$109.00
Cascade Self-Contained Water System	$108.00	$59.00
Extra Duplex Outlet	$120.00	$65.00
150-watt Power Supply	$230.00	$125.00
300-watt Power Supply	$550.00	$300.00

ADVANTAGES:

+ Meets majority of military specifications for dental treatment units.
+ Smooth, overall design facilitates asepsis.
+ Radius design increases positioning options.
+ Reported to decrease percutaneous injuries.
+ Radius hub design facilitates right- to left-hand conversion without tools.
+ Radius design presents a clean and uncluttered operatory appearance.
+ Two intensity-level fiber-optic system is designed to increase bulb life and reduce heat buildup in the handpiece hose coupler.
+ Control head air brake is incorporated into the positioning handle.
+ Has touch pad control for chair functions.
+ Separate water system is factory installed and easy to maintain.
+ UL listed, ADA accepted, and certified by CSA and ETL.
+ Well-illustrated operation, maintenance, and installation manuals.

DISADVANTAGES:

- The intensity of the fiber-optic system is not operator adjustable.
- Exact positioning of control head is required to both activate handpiece and reach oral cavity.
- Clinical evaluators felt that positioning the unit controls on side of control head made them difficult to use.
- Operatory light may interfere with folding levers.
- Control head unit cover requires removal of five screws for service access.
- Chair-mounted operatory light and Radius unit support arms interfere with each other.

SUMMARY AND CONCLUSIONS:

The A-dec Radius 2132 Continental dental unit met the majority of the requirements on the DIS Dental Treatment Unit Checklist as well as all requirements of ADA specification No. 47 for dental units. The Radius concept has been designed to facilitate increased flexibility in unit positioning as well as right- to left-hand conversion without tools. The quality of materials and construction is excellent and its smooth design and minimal articulations facilitate asepsis. The “folding lever” or “buggy whip” delivery system is reported to reduce percutaneous injuries as well as be more ergonomically advantageous to the operator. The factory-installed A-dec fiber-optic light system is designed to reduce light intensity by 30% when the handpiece is not actually in operation. This is purported to reduce heat buildup in the handpiece coupler and increases bulb life. However, the fiber-optic system intensity is not readily operator adjustable. The “folding lever” mechanism performed flawlessly but clinical evaluators had difficulty positioning the control head so that they could reach the oral cavity and activate the handpiece at the same time. Some evaluators noted interference of the folding levers with the overhead light and also noted difficulty in positioning the Radius unit when configured with the chair-mounted light. Evaluators rated the unit “Good” to “Excellent” when compared to other units they had used, but only 40% said they would buy the unit. The clinical evaluators either liked the unit or they disliked it; there was no middle ground. Although the “folding lever” design may reduce injuries, one must weigh the disadvantages of the delivery system against the possible advantages. The **A-dec Radius 2132 Continental Dental Unit** is rated **Acceptable** for use by the federal dental services.

(Lt Col Leonard, Mr. Gambal)

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48-30 A-dec 6300 Dental Operatory Light (Project 94-79)

The A-dec 6300 series Dental Operatory Light is available in a wide variety of delivery configurations including unit-, wall-, and ceiling-mounted (pedestal and track) systems. The 6300 Master Light Option is available on Cascade unit-mounted systems which allows on/off control of the light with the optional Master Touch Pad. The Cascade 6300 light will not adapt to non-Cascade delivery systems. All 6300 lights are adjustable in horizontal, vertical, and diagonal planes and offer three-step light intensity adjustment. The intensity range is reported to be between 22,000 and 32,000 lux. A 24V/150W quartz-halogen-xenon bulb with a color temperature of between 3800° and 4500° Kelvin is standard. The 6300 is available in both 110V and 220V models. The A-dec 6300 is UL listed, CSA and ETL certified, and ADA accepted.

Manufacturer:
A-dec, Inc.
2601 Crestview Drive
Newberg, OR 97132
(800) 547-1883
(503) 538-9471
(503) 537-2702 (FAX)

Suggested Prices:	**Retail**	**Gov't**
Cascade 6300 Unit Mount Light	$1690.00	$921.00
Cascade 6300 Master Unit Mount Light	$1690.00	$921.00
A-dec 6300 Post Mount Light (post not included)	$1740.00	$948.00
Radius 6300 Light	$1840.00	$1003.00
Radius 6300 Master Light	$1840.00	$1003.00
A-dec 6300 Wall Mount Light	$2190.00	$1194.00
A-dec 6300 Ceiling Mount	$2125.00	$1158.00
A-dec 6300 Track Light, Single Head	$2720.00	$1482.00
A-dec 6300 Track Light, Dual Head	$4610.00	$2512.00
Additional Quartz-Halogen-Xenon Bulb	$12.50	$6.81

ADVANTAGES:
+ Excellent quality materials and workmanship.
+ Touch Pad on/off control option.
+ Three-axis adjustability of light head.
+ UL listed, ADA accepted, and certified by CSA and ETL.
+ Well-illustrated operation, maintenance, and installation manuals.
+ Correct color temperature.
+ Right- to left-hand conversion without tools.
+ Self-lubricating pivots and bushings.
+ Adjustable focal length.

DISADVANTAGES:
- Illuminance (intensity) exceeds international and military specifications which may increase eye strain and fatigue.
- Illuminance pattern doesn't meet international and military specifications.
- Clinical evaluators perceived that patient access and entry/exit to dental chair were restricted.
- Some evaluators had difficulty coordinating the positioning of the Radius unit and light.

SUMMARY AND CONCLUSIONS:
The A-dec Radius 6300 dental operating light is well made, stable, and lends itself to quick and easy right- to left-hand conversion. The three-plane adjustability of the light head was praised by evaluators as was the ease of bulb replacement and lens cleaning. The design was noted to interfere with the Radius unit in certain positions, however. The light provided adequate illumination for dental procedures even though it was too bright according to International Standard ISO 9680 and military specifications for dental operating lights. Exceeding the recommended intensity has been reported in the literature to cause increased eye strain and fatigue. The A-dec 6300 also deviated from the international standard/military specification with regard to illumination pattern. Clinically, this would manifest itself as a narrowed horizontal light pattern which would require increased repositioning of the light when visualizing between the maxillary and mandibular arches. Despite deviations from the international standard/military specification, the **A-dec Radius 6300 Dental Operating Light** met the majority of the specifications and is therefore rated **Acceptable** for use by the federal dental services.

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(Lt Col Leonard)

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48-31 USI-IV Ultrasonic Dental Scaler (Project 95-06)

The USI-IV Ultrasonic Scaler is Ultrasonic Services' least expensive, manual-tune, magnestrictive periodontal ultrasonic scaler supplied with its unique Power Level Control Footswitch with automatic return. The unit utilizes Cavitron brand "Slimline," "TFI," or "P" series insert tips (25 kHz, Normal or Modified) as well as the company's own six periodontal inserts specifically designed for the Holbrook technique. The operating tip reportedly vibrates in an elliptical pattern at a frequency of 25 kHz, with an amplitude from 0.001 to 0.008 inch. The USI-IV measures 9.25 inches wide x 4.5 inches high x 10 inches deep and weighs 11 pounds. The unit is available in either 110- or 220-volt configurations.

Manufacturer:
Ultrasonic Services, Inc.
7126 Mullins Drive
Houston, TX 77081
(800) 874-5332
(713) 665-4949
(713) 665-4984 (FAX)

Suggested Prices:	**Retail**	**Gov't**
USI-IV Ultrasonic Scaler	$1595.00	$1595.00
Inserts:		
USI 10 H - Thin Straight Tip	$110.00	$110.00
USI 10 HR - Thin Tip Curved to Right	$125.00	$125.00
USI 10 HL - Thin Tip Curved to Left	$125.00	$125.00
Three Pack (one each of above)	$360.00	$360.00
USI 10 UH - Ultrathin Straight Tip	$110.00	$110.00
USI 10 UHR - Ultrathin Tip Curved to Right	$125.00	$125.00
USI 10 UHL - Ultrathin Tip Curved to Left	$125.00	$125.00
Three Pack (one each of above)	$360.00	$360.00

ADVANTAGES:
+ Power level foot control allows on-demand power selection.
+ Good selection of insert tips.
+ Excellent patient acceptance of scaler.
+ Accepts all Cavitron 25-kHz inserts.
+ Calculus and stain removal is excellent.
+ Access to deep periodontal pockets and root furcations is excellent.

+ Well-made, heavy-duty aluminum chassis.

DISADVANTAGES:
- Handpiece is not detachable or sterilizable.
- No capability to deliver sterile irrigation.
- Clinical evaluators felt power level foot control was bulky and awkward to use.
- Scaler is more expensive than comparable competitors because no government pricing is available.
- Operation manual doesn't include labeled diagrams or a trouble-shooting guide.
- Has no nationally-recognized electrical certifications.
- Is not autotunable.

SUMMARY AND CONCLUSIONS:
The entry-level USI-IV is one of several ultrasonic dental scalers manufactured by USI, Inc. It is well-made and rugged with a heavy-duty aluminum chassis. It is a manually-tuned, magnestrictive, 25 kHz scaler. The unit accepts all Cavitron 25-kHz inserts as well as its own inserts. A unique feature is the power level foot control which allows the operator to control the unit's power via a foot control similar in appearance and function to a car accelerator. Initially, clinical evaluators perceived the foot control as bulky and awkward, but they quickly adapted to it and listed the feature as very desirable. Unfortunately, the handpiece is not detachable and is, therefore, not sterilizable. More expensive USI, Inc. models have detachable handpieces, and a sterilizable handpiece is planned but not presently available. In addition, there is no provision for delivery of sterile irrigation. USI, Inc. doesn't offer government pricing so the USI-IV is more expensive than comparable units by other manufacturers who offer government pricing. Generally, clinical evaluators were pleased with the unit's calculus and stain removal, patient acceptance, and overall performance. The **USI-IV Ultrasonic Scaler** is rated **Acceptable** for use by the federal dental services.

(Lt Col Leonard)

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LABORATORY

48-32 Dialite Porcelain Polishing Kit (Project 96-13S)

The Dialite Porcelain Polishing Kit smooths and polishes porcelain that has been adjusted with abrasives. The kit contains five pre-polish wheels that contain silicon abrasive in a hardened phenolic resin and one diamond-impregnated Dialite polishing wheel. One pre-polish point and one Dialite point are included as well as two screw-top straight handpiece mandrels for the wheels. Both the mandrels and the rubber points are mounted on straight handpiece shafts. Pre-polish and Dialite wheels, points, and cups are available on right-angle latch shafts for intraoral use. Recommended operating speeds are included with the kit. The storage container has a white plastic base and a clear plastic top and measures 65 mm high, 73 mm wide, and 52 mm deep.

Manufacturer:
Brasseler USA
800 King George Blvd.
Savannah, GA 31419
(800) 841-4522
(912) 925-8525
(912) 927-8671 FAX

Suggested Retail Price:

$57.50	Standard Package (product no. 000-11211)
$0.70	Replacement pre-polish wheel (product no. 0301-220) 22 mm diameter X 3 mm thick
$29.00	Replacement Dialite wheel (product no. R17D) 16 mm diameter X 2.5 mm thick
$1.95	Replacement pre-polish point (product no. 0352C) 5.5 mm diameter X 10 mm long
$19.95	Replacement Dialite point (product no. H2D) 4.5 mm diameter X 13 mm long
$1.60	Replacement mandrel (product no. 305) 5 mm diameter

Government Price:

$36.82	Standard Package (product no. 000-11211)
$0.42	Replacement pre-polish wheel (product no. 0301-220) 22 mm diameter X 3 mm thick
$18.50	Replacement Dialite wheel (product no. R17D) 16 mm diameter X 2.5 mm thick
$1.50	Replacement pre-polish point (product no. 0352C) 5.5 mm diameter X 10 mm long
$14.95	Replacement Dialite point (product no. H2D) 4.5 mm diameter X 13 mm long
$0.95	Replacement mandrel (product no. 305) 5 mm diameter

ADVANTAGES:

+ Eliminates the need to use diamond paste.
+ Ceramic restorations can be polished to a high glaze at the chair.
+ Chairside polishing saves an average of 20 minutes per insertion by eliminating the glaze firing cycle.
+ Enhances infection control because the restoration is polished at chairside and does not need to be taken to the laboratory.
+ Produces a surface that is as glossy as a glazed surface.

DISADVANTAGES:

- The Dialite wheels, points, and plastic container cannot be heat sterilized.

SUMMARY AND CONCLUSIONS:

The Dialite Porcelain Polishing Kit provides porcelain that has a smooth, glossy surface. Evaluators found that the pre-polish wheel eliminated abrasions caused by common finishing stones. The Dialite wheel provided a high shine to the pre-polished area at approximately 10,000 rpm with light pressure applied to the handpiece. The Dialite-polished area was equal in luster to a glazed surface. The wheels work quickly at moderate speeds and light pressures. The Dialite wheel also smoothed the shoulder porcelain area. The lack of autoclavibility of the Dialite wheels and points may complicate chairside use. This kit eliminates the need to reglaze after adjustment. The **Dialite Porcelain Polishing Kit** is rated **Acceptable** for use by the federal dental services.

(MSgt Ryerson)

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48-33 Denture Adjustment Polishing Kit (Project 96-03S)

The Denture Adjustment Polishing Kit is used for the chairside adjusting, smoothing, and polishing of acrylic resin dentures. The kit consists of: a fine, cross-cut, pear-shaped, tungsten carbide bur; an extra-fine, cross-cut, flame-shaped, tungsten carbide bur; and two each of coarse, medium, and fine rubber points that contain silicon abrasive in a hardened phenolic resin. The autoclavable carbide burs are welded to stainless steel shanks and all items have straight handpiece shanks. Recommended operating speeds are included in the instructions. The storage container has a white plastic base and a clear plastic top; its exterior dimensions are 64 mm high, 99 mm wide, and 64 mm deep.

Manufacturer:

Brasseler USA
800 King George Blvd.
Savannah, GA 31419

(800) 841-4522
(912) 925-8525
(912) 927-8671 FAX

Suggested Retail Price:

$65.00 Standard Package (product no. 000-10611)
$3.95 Coarse replacement point (product no. 0674) 10 mm diameter X 24 mm long
$2.95 Coarse replacement point (product no. 0679) 5.5 mm diameter X 13 mm long
$3.95 Medium replacement point (product no. 0664) 10 mm diameter X 24 mm long
$2.95 Medium replacement point (product no. 0669) 5.5 mm diameter X 13 mm long
$3.95 Fine replacement point (product no. 0654) 10 mm diameter X 24 mm long
$2.95 Fine replacement point (product no. 0659) 5.5 mm diameter X 13 mm long
$20.95 Replacement carbide (product no. 251EF-060) 6 mm diameter X 14 mm long
$19.95 Replacement carbide (product no. 77E-040) 10 mm X 9 mm long

Government Price:

$47.43 Standard Package (product no. 000-10611)
$2.95 Coarse replacement point (product no. 0674) 10 mm diameter X 24 mm long
$1.95 Coarse replacement point (product no. 0679) 5.5 mm diameter X 13 mm long
$2.95 Medium replacement point (product no. 0664) 10 mm diameter X 24 mm long
$1.95 Medium replacement point (product no. 0669) 5.5 mm diameter X 13 mm long
$2.95 Fine replacement point (product no. 0654) 10 mm diameter X 24 mm long
$1.95 Fine replacement point (product no. 0659) 5.5 mm diameter X 13 mm long
$15.32 Replacement carbide (product no. 251EF-060) 6 mm diameter X 14 mm long
$14.41 Replacement carbide (product no. 77E-040) 10 mm diameter X 9 mm long

ADVANTAGES:

+ Carbide burs provide a smooth finish when grinding acrylic resin.
+ A surface polished with the rubber points is indistinguishable from a surface polished with rag wheels using coarse pumice and polishing compounds.
+ Because pumicing and polishing are unnecessary, the dental officer can remain chairside throughout the appointment.
+ Enhances infection control because appliances are polished in the operatory and do not need to be taken to the laboratory.
+ Burs and rubber points can be heat sterilized.

DISADVANTAGES:

- Some areas of appliances are inaccessible due to the large diameters of the rubber points.
- The plastic container cannot be heat sterilized.

SUMMARY AND CONCLUSIONS:

The Denture Adjustment Polishing Kit was well received by evaluating clinicians. The kit performed well on acrylic resin appliances and evaluators felt the final polish provided by the rubber points was equivalent to one produced using pumice and polishing compound. Smaller diameter points (5.5 mm) are available separately. These should eliminate the disadvantage the evaluators notice (that the standard rubber points are too large). A major advantage of this product is that it enables the clinician to perform the adjusting process in the treatment room. This enhances infection control because the denture does not need to be taken to the laboratory. This also saves time because the denture does not have to be disinfected. Recommended operating speeds must be followed to achieve a high luster and reduce the wear of the rubber points. The polishing kit can be ordered in an autoclavable anodized aluminum bur block. The **Denture Adjustment Polishing Kit** is rated **Acceptable** for use by the federal dental services.

(MSgt Ryerson)

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48-34 Acrylic Temporization Kit (Project 96-04S)

The Acrylic Temporization Kit is intended for the contouring and polishing of acrylic resin provisional crown and bridge restorations at chairside. The kit consists of: two extra-fine, cross-cut, tapered tungsten carbide burs; a serrated, double-sided, diamond disc for shaping interproximal areas; and two coarse, medium, and fine knife-edge rubber wheels containing silicon abrasive in a hardened phenolic resin. All carbide burs and diamonds are produced with stainless steel shanks making them fully autoclavable. Three screw-top mandrels are also included. All items have straight handpiece shanks. Recommended operating speeds are included with the kit. All components are held in a hollow aluminum bur block, 64 mm high, 102 mm wide, and 26 mm deep.

Manufacturer:
Brasseler USA
800 King George Blvd.
Savannah, GA 31419
(800) 841-4522
(912) 925-8525
(912) 927-8671 FAX

Suggested Retail Price:

$89.00	Standard Package (product no. 000-11711)
$20.95	Replacement carbide (product no. 79EF-040) 4 mm diameter X 13 mm long
$17.95	Replacement carbide (product no. 257EF-023) 2.3 mm diameter X 13 mm long
$19.00	Replacement double-side diamond disc (product no. 365-220) 22 mm diameter X 0.2 mm thick
$1.60	Replacement mandrel (product no. 305-050) 5 mm diameter
$1.95	Coarse replacement wheel (product no. BRO1) 22 mm diameter X 3 mm
$1.95	Medium replacement wheel (product no. BRO2) 22 mm diameter X 3 mm
$1.95	Fine replacement wheel (product no. BRO3) 22 mm diameter X 3 mm

Government Price:

$70.30	Standard Package (product no. 000-11711)
$15.32	Replacement carbide (product no. 79EF-040) 4 mm diameter X 13 mm long
$12.63	Replacement carbide (product no. 257EF-023) 2.3 mm diameter X 13 mm long
$12.50	Replacement double-side diamond disc (product no. 365-220) 22 mm diameter X 0.2 mm thick
$0.90	Replacement mandrel (product no. 305-050) 5 mm diameter
$1.25	Coarse replacement wheel (product no. BRO1) 22 mm diameter X 3 mm
$1.25	Medium replacement wheel (product no. BRO2) 22 mm diameter X 3 mm
$1.25	Fine replacement wheel (product no. BRO3) 22 mm diameter X 3 mm

ADVANTAGES:
+ Carbide burs allow access to gingival embrasures and a smooth finish in all areas including the margins.
+ Diamond disc effectively deepens and shapes interproximal areas.
+ Rubber wheels minimize damage to margins by eliminating the need for pumicing with rag wheels.
+ Surfaces polished with the rubber points are indistinguishable from surfaces polished with rag wheels using coarse pumice and polishing compounds.
+ Because pumicing and polishing are unnecessary, the dental officer can remain chairside throughout the appointment.
+ Provisional restorations never leave the treatment room; this eliminates the need for disinfecting them.
+ Burs, diamond disc, and rubber points can be sterilized.

DISADVANTAGES:
- Evaluators felt it necessary to pumice and polish anterior temporary restorations to eliminate ripples and achieve a high luster.

SUMMARY AND CONCLUSIONS:
Evaluators were enthusiastic about the contouring capabilities of the burs and diamond disc in the Acrylic Temporization Kit. They felt the final polish provided by the rubber wheels was very good. They also stated that pumicing and polishing was not needed when finishing posterior temporary restorations. However, the evaluators pumiced and polished anterior temporary restorations after using the rubber wheels to eliminate ripples and achieve a high polish. Rippling of the surface is caused by finishing a flat facial surface with a knife-edge rubber wheel. The rippling can be avoided by using the flat side of the wheel or augmenting the kit with rubber points made of the same material. While observing the evaluators, it was noticed that they did not use the medium wheel. This resulted in the low polish on the anterior provisional restorations. All three grades of rubber wheels must be used to achieve a high polish. Recommended operating speeds must be followed to achieve a high luster and reduce the wear of the rubber wheels. The **Acrylic Temporization Kit** is rated **Acceptable** for use by the federal dental services.

(MSgt Ryerson)

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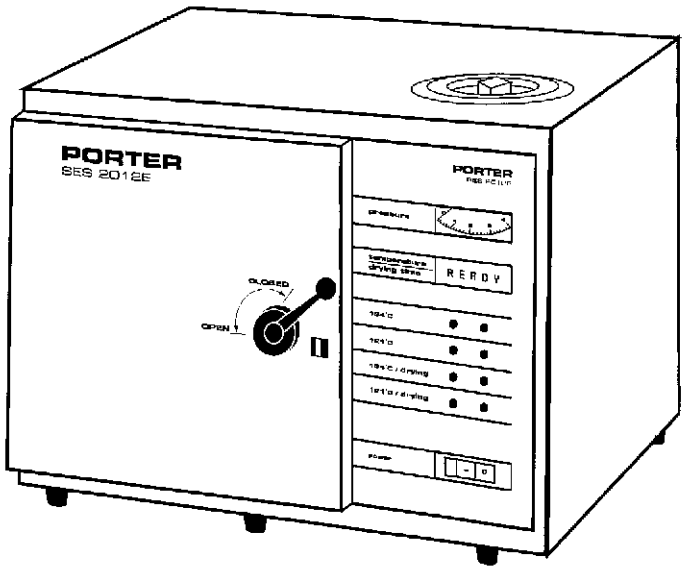
INFECTION CONTROL

48-35 Porter SES 2012EP Sterilizer (Project 95-36)

The Porter SES 2012EP is a fully-automated, microprocessor-controlled sterilizer with a 12-inch, round, seamless, stainless steel chamber. The exterior dimensions of the sterilizer are 20.6 inches high by 23.6 inches wide by 22.1 inches deep (without handle), 24.5 inches deep (with handle). The system operates at 240 volts ± 5%, 60 Hz with a loading of 3 kW, or 208 volts ± 5%, 60 Hz with a loading of 2.6 kW (switch selectable). The unit can be configured for plug-in or hard-wired connection. The microprocessor-controlled limits are constantly monitored to assure proper sterilization for each cycle selected. The controller sequences the complete cycle at the touch of one of the four icon-marked program selector buttons. Upon completion of the sterilization cycle, the unit exhausts and a brief audible signal is heard. All sterilization parameters (e.g., date, time, pressure and temperature) can be recorded on an optional printer. The digital display shows operating limits during use and error codes for testing and trouble shooting. Displayed error codes are accompanied by an audible signal.



+ Operating and servicing instructions are simple and easy to understand.
+ Can be back flushed which aids in cleaning.
+ Construction is of high quality.

DISADVANTAGES:
- Capacity is less than expected based on external size.
- Large footprint.
- Limited on-site parts replacement increases factory service requirements.
- Tools are required for cleaning reservoir.
- Difficult to replace control panel.
- Battery replacement requires service personnel.
- Unable to process liquids.
- Unit is heavy (185 pounds).
- Special tools are required to replace heating element.
- Service manual lacks exploded parts diagram.

SUMMARY AND CONCLUSIONS:
The Porter SES 2012EP is an automated stand-alone or counter-top sterilizer with a round, seamless, one-piece stainless steel chamber. Because it is microprocessor controlled, operating and monitoring the unit is easy and accurate. Its large digital display is easy to read from a distance and informs users of operating status as well as system errors. The SES 2012EP is capable of processing four standard dental cassettes and one small tray or eight small cassettes and one small tray. It has an optional coil rack that can be used to hold instruments in paper or plastic/paper packs vertically to facilitate drying. The sterilizer operates at 208/240 volts which shortens its preheating period and reduces overall cycle duration. The unit's stainless steel cover makes it easy to maintain and blends with any decor. The sterilizer's large footprint and size may present a problem if counterspace is at a premium. During the unit's four-month clinical-user evaluation, it performed extremely well. The **Porter SES 2012EP Sterilizer** is rated **Acceptable** for use by the federal dental services.

(Mr. Gambal, Lt Col Leonard)

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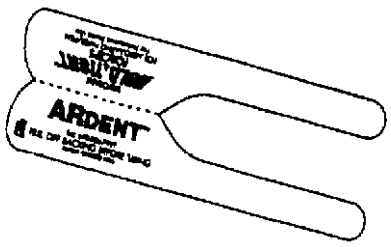
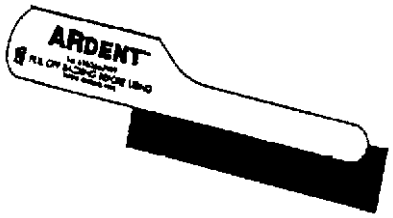
48-36 Hold Tight Forceps (Project 95-51S)

Hold Tight forceps are disposable, one-use, paper forceps for holding and positioning articulating paper intraorally. As shown in the accompanying figures, the forceps have a shape similar to that of metal articulating paper forceps. To use the Hold Tight forceps, a protective sheet of wax paper is stripped from the adhesive undersurface of the forceps. A piece of articulating paper is placed on the adhesive





surface of one side of the forceps and the two halves are then folded together. This brings the other adhesive surface into contact with the articulating paper so that the paper is held by both sides of the forceps. Any style or type of articulating paper or film can be used with the Hold Tight forceps.

Manufacturer:
Ardent, Inc.
300 Executive Blvd
Ossining, NY 10562
(914) 923-1216
(914) 923-3559 FAX

Suggested Retail Price:
$5.95 Hold Tight Forceps (package of 100)

Government Price:
$5.45 Hold Tight Forceps (package of 100)

ADVANTAGES:
+ The forceps are disposable and intended for one-time use which enhances infection control.
+ Holds articulating paper or film securely.
+ Can be used with any type of articulating paper or film.
+ Instructions are concise and clear.
+ Eliminates the potential for damage to tooth structure if patient inadvertently occludes on forceps.
+ Because the product is a unit-dose item, it is useful on sick call when articulating paper is needed.

DISADVANTAGES:
- Not rigid enough to retract oral tissues.
- Is relatively bulky and too large for some small mouths.
- Clinician must use new forceps every time a new piece of articulating paper is needed.
- Takes more time to assemble than standard metal forceps.

SUMMARY AND CONCLUSIONS:
The primary advantage of this product is its disposability. This eliminates the need to sterilize the forceps and, in general, enhances infection control. Another advantage noted by our evaluators was Hold Tight's "unit-dose" packaging. Because many clinicians include their articulating paper forceps as part of a kit or pack of sterilized instruments, having a unit-dose, disposable articulating paper forceps eliminates the need to open an entire pack of instruments when only the forceps are needed. This makes the Hold Tight forceps convenient for sick call appointments or for night guard delivery appointments. The product has several disadvantages that offset its basic advantages, however. The first is that it is too weak to adequately retract the oral tissues. This problem becomes more pronounced as the paper forceps become wet from the patient's saliva. The device was judged to be relatively bulky and too wide for some small mouths. Clinicians also objected to the effort and time required to assemble the forceps and insert the articulating paper into the forceps. Finally, if a new piece of articulating paper is needed, another forceps must be used because there is no way to remove the used paper and insert a new piece of paper into the forceps. In summary, although the forceps are beneficial from an infection control standpoint and are useful in specific clinical situations, most of our evaluators preferred to use standard metal forceps. **Hold Tight Forceps** are rated **Acceptable** for use by the federal dental services.

(Lt Col Charlton)

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48-37 WaterSense Automatic Faucet Controller (Project 93-52)

The WaterSense Automatic Faucet Controller is a battery-powered (9-volt), ultrasonic sensor that allows personnel to wash their hands without touching the faucet controls. The controller uses a motion-sensor to turn the water on when hands move under the device. The controller has a manual/automatic switch if manual faucet operation is desired. The device can be installed on most existing plumbing fixtures in less than 15 minutes and requires no extensive plumbing or electrical modifications. An LED indicator gives warning that the battery is beginning to fail. It measures 19.5 mm wide by 52.5 mm long by 22.6 mm deep.

Manufacturer/Source:
Hands Free Corporation
180 Fawcett Street
Cambridge, MA 02138
(617) 491-7300
(617) 491-4609 FAX

Suggested Retail Price:
$159.95 WaterSense Model #WTS-1A

Government Price:
Same as retail, however, discounts are given for volume purchases

ADVANTAGES:
+ May reduce spread of potential pathogens because it allows hands-free operation of faucet.
+ Relatively simple to install; may be retrofitted to most existing faucets.
+ Does not require electrical connection.
+ May facilitate rinsing of glassware and containers.

DISADVANTAGES:
- Fixture's bulkiness may be annoying to some users.
- Battery needs to be replaced every 9 to 12 months.

SUMMARY AND CONCLUSIONS:

Conventional faucets are acceptable for most dental treatment rooms, especially when other aseptic methods are used for turning faucets on and off. These methods include use of barriers or using one's elbow. For those who are willing to pay for an automatic controller, the WaterSense Faucet Controller is easy to install and requires no extensive plumbing or electrical modifications. Although the sensor may activate when external ultrasonic sources are brought to within two to three inches of it, this is not a major problem. One controller developed a leak during the evaluation, but it was readily stopped by tightening it to the faucet head. The **WaterSense Automatic Faucet Controller** is rated **Acceptable** for use by the federal dental services.

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